ORIGINAL

E000022061

OPEN MEETING

MEMORANDUM

TO: THE COMMISSION

FROM: Utilities Division

DATE: October 31, 2022

RE: IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR A RULING RELATING TO ITS 2022 DEMAND SIDE MANAGEMENT IMPLEMENTATION PLAN. (DOCKET NO. E-01345A-21-0087)

INTRODUCTION

Enclosed are the Commission Staff's memorandum and proposed order for the matter of the application of Arizona Public Service Company for a ruling relating to its 2022 Demand Side Management Implementation Plan (Docket No E-01345A-21-0087). This is only a Staff recommendation to the Commission; it has not yet become an order of the Commission. The Commission may decide to accept, amend or reject Staff's proposed order.

You may file comments to the recommendation(s) of the proposed order by efiling at https://efiling.azcc.gov/ or filing an original and the appropriate number of copies in accordance with the Filing Requirements available at http://azcc.gov/hearing/docket-control-center-filing-requirements, with the Commission's Docket Control on or before: **November 4.**

This matter may be scheduled for Commission deliberation at its Open Meetings scheduled **November 9, 2022, and November 10, 2022.**

If you have any questions about this matter, please contact Ryan Kern of our Staff at (602) 364-1794 or Elijah Abinah, Director, at (602) 542-6935.

BACKGROUND

On December 17, 2021, APS filed with the Arizona Corporation Commission ("Commission") an application for approval of its 2022 Demand Side Management ("DSM") Implementation Plan ("2022 DSM Plan") pursuant to the Arizona Administrative Code ("A.A.C.") R14-2-2401 through R14-2-2419 ("EE Rules").

2022 DSM PLAN

The APS 2022 DSM Plan proposes to continue the current Commission-approved DSM portfolio of measures or programs targeted to multiple customer segments that were approved in the 2021 DSM Plan. APS states that the Company intends to continue the current incentive levels

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approved in the 2021 DSM Plan "...unless otherwise specified herein." The APS 2022 DSM Plan also proposes to continue to offer its approved measures or programs designed specifically to assist customers who have been impacted by the COVID-19 pandemic.

The focus of the Commission Utilities Division Staff's ("Staff") review is on new, modified, and/or expanded measures and programs proposed in APS's 2022 DSM Plan. Therefore, Staff did not conduct cost-benefit analyses for measures or programs previously approved by the Commission. For measures or programs in which Staff conducted a cost-benefit analysis, Staff performed its analysis in accordance with A.A.C. R14-2-2412(B), which requires that the Societal Test be used for determining cost-effectiveness of DSM measures or programs. Under the Societal Test, for a program or measure to be considered cost-effective, the ratio of benefits to costs must be greater than one. Staff used this method to determine if a program or measure is cost-effective.

The table below shows the current Commission-approved programs included in APS's DSM Portfolio:

Residential Programs
Existing Homes Program
Residential New Construction Program
Conservation Behavior Program
Multifamily Energy Efficiency Program
Limited Income Weatherization Program*
Residential Battery Pilot*
Non-Residential Programs (Solutions for Business)
Existing Facilities Program
New Construction and Major Renovation Program
Schools Program
Energy Information Services Program
Advanced Rooftop Control (ARC) Pilot*
DSM Initiatives (both Residential and Non-Residential)
Building Codes and Appliance Standards Initiative*
Demand Response Programs*
Rewards Energy Storage and Load Management Initiative

APS System Savings*
Energy and Demand Education*
EV Managed Charging Pilot
Peak Solutions Initiative*
Tribal Communities Energy Efficiency Program

*APS is not proposing any modifications to these programs. Therefore, Staff did not include discussion of these programs in its report.

In addition to the modifications being proposed by APS to its existing programs, the Company has proposed to reintroduce as well as add programs to its current Residential and DSM Initiatives Portfolio. The programs being proposed for reintroduction and addition are shown in the table below:

Residential Programs
Shade Tree Program
DSM Initiatives (both Residential and Non-Residential)
Distributed Demand-Side Resource ("DDSR") Aggregation Tariff

A. Residential Programs

Existing Homes Program

Description

The Existing Homes Program ("EHP") combines LED lighting, energy-efficient smart thermostats, energy-efficient Heating, Ventilation, Air Conditioning ("HVAC") equipment, and Home Performance with ENERGY STAR® offering into one comprehensive program. The program encourages residential customers to purchase energy-efficient products, the proper installation of energy-efficient HVAC equipment, and promotes a whole house approach to energy efficiency. Additionally, after approval of APS's 2020 DSM Plan (Decision No. 77763), the Company has increased incentives related to emergency HVAC replacements, for qualifying customers, in response to the socioeconomic impacts of the COVID-19 pandemic. The current EHP structure was approved in Decision No. 78164.

Modifications

APS is proposing to continue the increased funding for both higher incentive levels and modified program requirements for qualifying emergency HVAC replacements approved in Decision 77763 and continued in Decision No. 78164. The COVID-19 Quality Installation

incentive will continue at $1,000 per unit for all qualifying 14 Seasonal Energy Efficiency Ratio ("SEER") units, and $1,200 per unit for all qualifying equipment 15 SEER and above. The conditions of the increased COVID-19 Quality Installation incentives are as follows:

a. The HVAC unit must be an emergency replacement of existing HVAC equipment that has failed or is failing. The incentive does not apply to early replacement of working equipment or to new HVAC units that are not replacing existing equipment.

b. Customers must self-attest that they have become unemployed due to the COVID-19 pandemic, or customers must meet the eligibility guidelines for the Company's Energy Support program (E-3) or Energy Support with Medical program (E-4). To receive the increased incentives, participants will be required to sign a form that confirms they meet the program qualifications.

c. HVAC units may be replaced until funding is no longer available or until the Commission approves discontinuation of the additional COVID-19 funding.

d. Customers must meet all other current program requirements.

In addition, as part of the EHP, along with the continued COVID-19 Quality Installation modifications, APS is proposing to incorporate a $50 incentive for qualifying Real Time Energy Monitoring Devices, which were approved as part of the Conservation Behavior Program in Decision No. 77763. Its inclusion will allow the measure to be offered and installed by participating Home Performance with ENERGY STAR® contractors.

Staff notes that customers who are not eligible to receive the increased Quality Installation incentives related to the COVID-19 pandemic may still be eligible to receive a $200 Quality Installation incentive if they meet all other current program requirements.

Staff Recommendations

Staff recommends approval of the proposed continuation of the COVID-19 Quality Installation incentive of $1,000 per unit for all qualifying SEER 14 units, and $1,200 per unit for all qualifying equipment 15 SEER and above as part of the Existing Homes Program. The expanded incentive levels do not impact cost-effectiveness. In addition, Staff believes that it is appropriate to continue the enhanced program offerings related to COVID-19, especially in light of inflationary pressures which impact low-moderate income and unemployed customers more acutely.

Furthermore, Staff recommends approval of the proposal to include the $50 incentive for qualifying Real Time Energy Monitoring Devices as part of the Existing Homes Program as it has no impact on cost-effectiveness. Rather, its incorporation into the EHP portfolio will likely augment the EE savings realized by the technology.

Residential New Construction Program

Description

The Residential New Construction Program promotes high-efficiency construction practices for new homes. The program offers incentives to builders that meet energy efficiency requirements. The program is based on the Environmental Protection Agency's ("EPA") ENERGY STAR® version 3 new homes certification and includes additional energy efficiency requirements. The program also includes builder incentives to install connected electric water heaters, HVAC ducting in conditioned spaces, and Electric Vehicle ("EV") Ready pre-wiring. EV Ready pre-wiring accommodates future installation of EV charging stations. The current Residential New Construction Program structure was approved in Decision No. 78164.

Modifications

APS is proposing to pay proportionally higher incentives for new all-electric ENERGY STAR® homes that generate greater annual kilowatt-hour ("kWh") savings than comparable dual-fuel homes. The Company would continue to offer $200 per home for dual-fuel homes that meet program requirements; and begin offering an incentive of $270 per home for all-electric homes which meet program requirements and offer increased kWh savings. The difference in proposed incentive levels was calculated based upon the proportional difference in average kWh savings of a new ENERGY STAR® all-electric home compared to a new ENERGY STAR® dual-fuel home.

Staff Recommendations

Staff recommends approval of the proposed increased incentive, of $270 per home, for new ENERGY STAR® all-electric homes which meet program requirements relative to the existing $200 per home incentive for new ENERGY STAR® dual-fuel homes. The increased incentive level for new ENERGY STAR® all-electric homes, to reflect their average additional energy savings, does not impact the cost effectiveness of the measure.

Conservation Behavior Program

Description

The Conservation Behavior Program provides participating customers with information intended to motivate them to adopt energy conservation behaviors. The program provides direct-mailed, emailed, and/or online reports to participants that show how the energy usage in their homes compares with energy-efficient homes and other similar homes. In addition to providing these benchmarks, the reports also highlight energy efficiency measures and actions participants can take to improve the energy efficiency of their homes and save on energy costs, including a Plan Coach feature for customers on time-of-use ("TOU") rates that helps them learn how to save through shifting more of their energy consumption to off-peak periods.

Modifications

APS is proposing to resume behavioral demand response via the usage of event-based behavioral messages on peak days to encourage greater EE savings during periods of peak summer energy demand. Behavioral demand response with event-based messaging on peak days was previously approved with Decision No. 75679 but was paused while the Company sought additional channels through which to motivate customers to decrease their energy consumption and shift portions of their energy use off-peak, and provide customers with the information and tools to do so. The Company has found the program to be cost-effective.

Staff Recommendations

Staff recommends approval of APS's relaunching of event-based behavioral messages on peak days. The measure's pausing in 2017 was not the result of any issues related to cost-effectiveness, but rather the Company's shifting of efforts towards the development of TOU Plan Coach reports and Home Energy Report messages during its transition to new rates in 2017-2018. The measure was found to be cost-effective and has been implemented by a number of utilities which the Company has researched in its deliberations regarding the measure.

Multifamily Energy Efficiency Program

Description

The Multifamily Energy Efficiency Program ("MEEP") encourages efficiency improvements of multifamily properties and dormitories by using a two-track approach intended to target existing and new construction multifamily buildings. Track one targets existing multifamily properties providing direct-install retrofit measures at no cost to the existing multifamily community. However, the direct-install measures must be installed by facility personnel. In addition, this track offers energy assessments to help identify additional energy savings opportunities and available APS rebates within the multifamily complex but outside of the individual dwelling units (such as common area buildings, swimming pools, outdoor lighting, and laundries). Track two is for new construction/major renovation that offers a per-dwelling incentive for projects that build or renovate to a higher level of efficiency. Incentives increase as a higher level of efficiency is achieved. The current MEEP structure was approved in Decision No. 78164.

Modifications

APS is proposing to add three new measures to the program which are intended to provide expanded savings opportunities for APS customers who reside in multifamily properties including: Electronically Communicated ("EC") motors in HVAC air handlers, EC motors in bathroom exhaust fans, and occupancy sensors for common areas. The summary and details regarding MEEP proposed new measures are included below:

a. The installation of EC motors in HVAC handlers is intended to replace existing Permanent Split Capacitor ("PSC") motors. EC motors provide energy efficiency

savings not only through their decreased demand for operation relative to PSC motors, but also through better matching the air flow provided to the HVAC system in relation to its heating or cooling British thermal unit ("Btu") demand at any moment. APS is proposing to offer a $75 per horse-power incentive for the installation of an EC motor within a new or existing HVAC air handler.

b. EC motors in Bathroom Exhaust Fans are an efficient alternative to new standard-efficiency exhaust-only ventilation fans. Energy savings are achieved through reductions in run-time as a result of electronic monitoring components, in fans with EC motors, which operate only when needed and at the optimal repetitions-per-minute ("RPM") setting at a given point in time. Additionally, the Company is currently implementing approved measures covering EC motors for fan and ventilation purposes within its non-residential portfolio. APS is proposing to offer a $4 per EC motor installed within bathroom exhaust fans with up to 200 cubic feet per minute capacity.

c. The usage of occupancy sensors, in relation to lighting, allows the lighting for a targeted space to be automatically shut off when unoccupied. APS is proposing to include occupancy sensors into the MEEP portfolio to target the common areas of multifamily housing complexes which do not have them installed. The Company is currently implementing an approved occupancy sensor measure, which targets hotel rooms, within its non-residential portfolio. APS is proposing a $30 per unit incentive for the installation of occupancy sensors within multifamily housing-complex common areas.

Additionally, APS intends to add the previously approved EV pre-wire measure into the multifamily program (currently included within Residential New Construction Program). Furthermore, following the approval for APS to streamline the implementation of its MEEP program using the same contractor who delivers the Solutions for Business Program, APS proposes to consolidate the reporting of all savings achieved in multifamily properties (including both residential rental units and non-residential common areas) within the MEEP.

Staff Recommendations

Staff found the EC motors in HVAC air handlers to be cost-effective with a ratio of 1.77. Therefore, Staff recommends approval of the proposed EC motors in HVAC air handlers.

Staff found the EC motor bathroom exhaust fans to be cost-effective with a ratio of 1.08. Therefore, Staff recommends approval of the proposed EC motor bathroom exhaust fans.

Staff found the occupancy sensors for common areas to be cost-effective with a ratio of 1.10. Therefore, Staff recommends approval of the proposed occupancy sensors.

Additionally, Staff recommends approval for the inclusion of the previously approved EV pre-wire measure, which is currently available through the Residential New Construction Program, as a measure within the MEEP portfolio.

Furthermore, Staff recommends approval for the consolidated reporting of energy savings achieved in multifamily properties (including both residential units as well as their non-residential common areas) within the MEEP.

Limited Income Weatherization Program

Description

The Limited Income Weatherization Program ("LIWP") provides support to residential customers who have the most difficulty affording their energy costs. The LIWP is designed to improve the energy efficiency, safety, and health attributes of homes occupied by customers whose income falls within 200 percent of the federal poverty level. The weatherization component offers various home improvement measures including cooling system repair and replacement, insulation, sunscreens, water heaters, window repairs and improvements, and other general household repairs. The LIWP is administered by various community action agencies throughout APS's service territory. The current LIWP structure was approved in Decision No. 78164.

Modifications

APS proposes to continue the increased per home spending cap of $9,000 "...until at least the end of the 2022." The budget approved Decision No. 78164 will allow APS to continue supporting a funding cap of $9,000 per home to provide support for larger efficiency projects, including emergency HVAC replacement and related repairs in cases where other assistance dollars may not be available.

Staff Recommendations

Decision No. 78164, continued the increased per home spending cap of $9,000 "until the end of 2021 for the Limited-Income Weatherization Program is approved until further Order of the Commission." In an effort to clarify the language in Decision No. 78164, Staff believes that the increased per home spending cap should continue as approved until further Order of the Commission. Therefore, Staff recommends that the program specifications approved in Decision No. 78164 continue until further Order of the Commission.

Shade Tree Program

Description

APS is proposing to reintroduce the Residential Shade Tree Program as part of its 2022 Residential Portfolio. The program's proposed reintroduction is in response to Commissioner and stakeholder concerns about urban heat island impacts, heat resiliency and the lack of shade in

disadvantaged communities. The Shade Tree Program was suspended in Decision No. 75323 (November 25, 2015) due to having an observed societal benefit to cost ratio of less than 1.0. However, the updated version of the program has been streamlined in various ways, targets less efficient existing homes and is being proposed at a time when the costs being avoided have increased due to statewide, national, and international macroeconomic circumstances.

The typical size of trees discounted by the program will be approximately ten-gallon pots but may vary depending on cost and availability. The incentives available for qualifying trees and planting locations will be offered on a sliding scale between 25 percent and 75 percent of tree costs depending on the residential areas being targeted, with higher levels of incentives being directed towards the planting of trees in disadvantaged communities. Participants may receive up to two discounted trees through the program, which applies to the following desert-adapted and low-water use trees: Thornless Palo Verde, Thornless Mesquite, Native Mesquite (with thorns), Desert Willow, and Willow Acacia.

Modifications

APS has identified a number of factors that will improve the cost effectiveness of the proposed program compared to its predecessor, including:

a. As a result of growing regional needs for future peak generation capacity, there is currently a higher avoided cost value for regional summer peak capacity which yield increased grid value and higher net benefits.

b. APS is proposing to streamline the educational provisions of the program as well as the acquisition of qualifying trees by customers. Previously, the program was implemented via the provision of on-site classes and facilitation of tree fulfilment events which required the transportation of trees to distribution event sites. Under the newly proposed program, classes and other educational materials will be made available online, and customers will be provided with coupons for discounted qualifying trees at local retailers.

c. APS is proposing to target the program to disadvantaged communities in order to better reach older and more inefficient dwellings in areas which historically have lacked shade. This approach will yield both higher average energy savings and greater individual benefits for participating customers.

d. More optimal planting of trees will assure the achievement of projected individual and system energy savings via the installment of an application process which requires customers to provide details as to the intended location for the trees' planting.

Staff Recommendations

Staff found the Shade Tree program, with its modifications from previous implementation as well as updated research, to be cost-effective with a ratio of 1.62. Therefore, Staff recommends approval of the reintroduction of the Shade Tree program into APS's Residential DSM portfolio.

B. Non-Residential Programs (Solutions for Business)

Existing Facilities Program

Description

The Existing Facilities Program ("EFP") provides prescriptive incentives to owners and operators of non-residential facilities for DSM improvements in lighting, HVAC, motors, building envelope, and refrigeration measures. In addition, the EFP offers incentives for pilot electrification measures including forklifts, airport vehicles, and standby truck refrigeration. Further, the EFP also offers custom incentives that are evaluated individually based on energy savings.

New Construction and Major Renovation Program

Description

The New Construction and Major Renovation ("NCMR") Program includes three components: (1) design assistance, (2) prescriptive measures, and (3) custom efficiency measures. Design assistance involves integration of energy efficiency into a customer's design process to influence equipment/systems selection specifications as early in the process as possible. Prescriptive and custom measures such as lighting, HVAC, motors, building envelope, and refrigeration are included. In addition, the New Construction custom efficiency measures component includes Whole Building Design which encourages customers, developers, and design professionals to design, build, and invest in higher performing buildings through a tiered performance incentive structure. Incentives increase as the building performance improves.

Schools Program

Description

The Schools Program sets aside funding for K-12 school buildings (public, private, and charter). The DSM measures and incentives available to schools are the same as those available for all non-residential programs including lighting and refrigeration. Once schools fully subscribe to the Schools Program, or once a school reaches the cap of $100,000 per year, schools can participate in other non-residential programs. Incentive levels are the same as for Existing Facilities (for existing school facilities) and New Construction (for new school construction and major renovations). APS also offers the same DSM measures in the Schools Program to qualifying non-profit community organizations.

Modifications for Non-Residential Programs:

APS is proposing to continue the enhanced incentives put in place due to the COVID-19 pandemic (originally approved with Decision No. 77763 and continued with Decision No. 78164) and provide up to 75 percent of the incremental costs associated with a qualifying emergency HVAC replacement. The Company proposes to continue the incentives through at least the end of 2022. Additionally, APS is proposing 15 new prescriptive measures to include, in a

varying/staggered fashion, across the three non-residential programs. Both the proposal to continue augmented non-residential HVAC incentives as well as add 15 new measures have application to more than one non-residential program. Therefore, the Modifications and Staff Recommendations sections were combined for the three non-residential programs.

Details concerning the increased incentives prompted by the COVID-19 pandemic, for qualifying non-residential HVAC emergency replacement, have not changed since their most recent Commission approval in Decision No. 78164.

The 15 new prescriptive measures being proposed by APS in its 2022 DSM Plan include:

- CO_2 Sensors
- Outside air economizers
- Occupancy Sensors
- Demand response lighting controls
- Flat-panel LED lighting
- Fluorescent to smart LED panel conversions
- High-efficiency battery chargers
- High-efficiency indoor agriculture dehumidification
- Indoor agriculture LED lighting
- Interior high bay HID to LED conversions
- Smart LED lighting panels
- Smart screw-in LED bulbs
- HVAC thermal energy storage systems
- Refrigeration thermal storage systems
- Water source heat pumps

The following segment details the specifications of the measures concerning the technologies being utilized, their application to the various non-residential customer class, and the ratio of their cost-effectiveness under the Societal Test:

Proposed Inclusion into Current Non-Residential Programs:

- *Existing Facilities, New Construction and Major Renovations, and Schools Programs:*
  - High efficiency battery chargers
  - High-efficiency indoor agriculture dehumidification
  - Indoor agriculture LED lighting
  - HVAC thermal energy storage systems
  - Refrigeration thermal storage systems
  - Water source heat pumps
- *Existing Facilities and Schools Programs Only:*
  - Demand response lighting controls
  - Flat-panel LED lighting
  - Fluorescent to smart LED panel conversions

- Interior high bay HID to LED conversions
- Smart screw-in LED bulbs

- *Existing Facilities Program Only:*
  - Outside air economizers
  - Occupancy sensors

1) CO_2 Sensors

Carbon dioxide ("CO_2") sensors, for application with HVAC systems, monitor the levels of CO_2 in a facility/space to modulate the outside air damper and adjust ventilation rates. The integration of CO_2 sensors with HVAC operation serves to both ensure healthy air quality (at least as it relates to CO_2) as well as optimize HVAC consumption to periods where the relevant space is being occupied and allows for savings available through dynamic air flow settings in typical HVAC systems. APS is proposing to offer a $200 per unit incentive for the installation of a CO_2 sensor which communicates with facilities' HVAC systems.

2) Outside Air Economizers

Outside air economizers can be integrated into new and existing HVAC systems setups and save energy by monitoring outside air temperatures and allowing outside air into a building in order to more optimally reach and maintain a set temperature point. This decreases the amount of run-time and energy usage by the existing HVAC system which will rely heavily on simply recirculating and heating/cooling a facility's air. Outside air economizers have already been approved within the ARC pilot ordered in Decision No. 78164, which combines their utilization with energy management systems and variable frequency drives. APS is proposing to offer a $50 per system ton incentive for the installation of an air side economizer into new or existing non-residential HVAC systems.

3) Occupancy Sensors

Occupancy sensors detect indoor activity within a certain targeted area. The sensors are able to save energy by turning lights off soon after an occupant has left the designated area which it is positioned to monitor. The technologies accounted for in APS's proposed measure include Passive Infrared ("PIR") sensors, ultrasonic sensors and XCT sensors. The Commission approved a similar measure pertaining to occupancy sensors for hotel rooms in Decision No. 78164. APS is proposing to offer an incentive of $20 per unit for the installation of a new occupancy sensor.

4) Demand Response Lighting Controls

Demand response lighting controls reduce lighting demand by better optimizing the usage of lights in relation to areas in which activity is occurring. Such lighting control systems can more efficiently illuminate areas via potential real time usage and analytics for end users, operate with other building systems, and adapt/be easily reconfigured as space usage changes. APS is

proposing to offer a $0.10 per square-foot (of impacted lighting space) incentive for the installation of demand response lighting controls within facilities.

5) Flat-panel LED Lighting

The proposed flat-panel LED lighting measure is intended to replace existing, and inefficient, T8 linear fluorescent lamps with electronic ballasts. Flat Panel LEDs are more efficient, have a longer measure life, lower maintenance costs as well as provide additional environmental benefits. APS is proposing an incentive for customers of $15 per fixture for the conversion from T8 linear fluorescents to 2x2 or 2x4 flat panel LEDs.

6) Fluorescent to Smart LED Panel Conversions

Smart LED panels provide similar efficiency benefits, relative to fluorescent fixtures, as those included in the proposed Flat Panel LED measure, but with the added impacts of connectivity to broader energy management systems, automatic response to external lighting and occupancy conditions, and the ability to fine-tune lighting usage by gathering data on user behavior. APS is proposing an incentive for customers of $20 per fixture for the conversion of linear fluorescents to smart LED panels, and an incentive of $5 per fixture for the conversion of existing regular LED panels to smart LED panels.

7) High-efficiency Battery Chargers

High-efficiency battery chargers are used for portable electrical industrial equipment such as forklifts, fork trucks, and airport equipment in factories, warehouses, and similar facilities. APS states that this measure is intended to encourage the adoption of electric forklifts to replace conventional Silicon Controlled Rectifier ("SCR") or Ferro-resonant battery chargers. The Company further details that the measure specifically applies to warehouse and distribution centers where forklifts are typically used. APS is proposing to offer a $275 per unit incentive (roughly half of the participant incremental cost) for the purchase of a high frequency battery charger.

8) High-efficiency Indoor Agriculture Dehumidification

Dehumidification systems are commonly used by indoor farming operations to provide the controlled growing conditions necessary to produce higher yields with less need for chemical fertilizers and pesticides. Due to the typical high usage of the dehumidification systems by indoor farming operations, adoption of high efficiency ENERGY STAR® systems can provide sizeable savings, especially coincident-peak savings, relative to less efficient systems. APS is proposing to offer $0.50 per pint of dehumidification capacity (per day) for systems with energy factors between 2.8 and 3.5; and $2.00 per pint of daily dehumidification capacity for systems with energy factors of 3.5 or greater.

9) Indoor Agriculture LED Lighting

The proposed measure by APS is intended to promote the adoption of higher efficiency LED lights which helps to more efficiently maintain optimal plant growth conditions. The energy savings can be substantial both regarding kWh consumption as well as peak demand reduction

because indoor farmers are unable to shift consumption away from on-peak hours. Given that lighting demand varies among the stages of plant growth, APS is proposing a $0.10 per photosynthetic photon flux ("PPF") unit incentive during the seeding stage, $0.05 per PPF during the flowering stage, and $0.07 per PPF during the vegetative state. PPF gauges the amount of light being emitted which is utilized by plants for the process of photosynthesis.

10) Indoor High Bay HID to LED Conversions

High-intensity discharge ("HID") lights produce light through the creation of an electrical arc formed between two metal conductors within an ionized gas. Such lights need to warm up to their full intensity due to the changing physical conditions inside the bulb. LED lights provide instantaneous full-intensity lighting as well as greater overall efficiency and wattage to lumen ratio, with LED lights being around 70 percent more efficient than HID lights. APS is proposing to offer per-fixture incentives for the conversion from HID to LED high-bay lighting, including: $20 for the conversion to LED high bay fixtures of 100 or fewer watts, $45 for the conversion to LED high bay fixtures of 200 or greater watts, and $25 for the conversion to LED high bay fixtures between 100 and 200 watts.

11) Smart Screw-in LED Bulbs

The smart screw-in LED bulb measure is intended to replace existing inefficient screw-in incandescent bulbs. Not only do smart screw-in LED bulbs carry improved operating efficiency relative to incandescent bulbs, but they are able to achieve additional energy savings as a result of being programmed/automated by customers through their smartphones and smart thermostats. APS is proposing a $6.00 per bulb incentive for the purchase and installation of a smart screw-in LED bulb which replaces an existing screw-in incandescent bulb.

12) HVAC Thermal Energy Storage Systems

HVAC thermal energy storage systems allow for the freezing of water (or production of ice) during off-peak hours (typically at night), to be stored in large ice storage tanks and used in conjunction with the HVAC unit to cool facilities during the day and on-peak hours. According to APS, these thermal energy storage systems are typically sized to achieve partial load shifting capacity, allowing for smaller HVAC chiller components. APS is proposing to offer a $30.00 per ton-hour of system operation/consumption, for the installation/integration of thermal energy storage units with new or existing HVAC systems.

13) Refrigeration Thermal Storage Systems

Thermal energy storage is also used for the purpose of refrigeration of spaces in order to consume less energy during peak times. Whether for large warehouses storing frozen and refrigerated foods, or walk-in freezing units, the freezing of ice or other phase-changing material in large tanks during off-peak times helps maintain necessary temperature levels with less reliance upon a facility's HVAC unit. APS is proposing an incentive of $350 per ton of system cooling capacity for the installment of refrigeration thermal energy storage systems.

14) Water-Source Heat Pumps

Water source heat pumps ("WSHP") cool areas by absorbing thermal energy and transferring it away, whether into another water or air source, and vice versa for heating. A WSHP system can provide additional energy savings in facilities when the need for heating and cooling in different areas arise simultaneously; whereby water that is heated in order to cool one space is transferred to another in order to heat it. APS is proposing to offer a $2.00 per kBtu/h of system capacity for installment of a Tier 1 WSHP, and a $3.00 per kBtu/h of system capacity for the installment of a Tier 2 WSHP.

Staff Recommendations

Staff found CO_2 sensors to be cost-effective with ratios ranging from 1.58 for the lowest scenario involving sensors for a large office setting to 3.57 for the highest scenario involving sensors for a strip mall setting. Therefore, Staff recommends approval for the inclusion of the proposed CO_2 sensors into the Existing Facilities Program portfolio.

Staff found outside air economizers to be cost-effective with a ratio of 2.15. Therefore, Staff recommends approval for the inclusion of the proposed outside air economizers into the Existing Facilities Program portfolio.

Staff found occupancy sensors to be cost-effective with a ratio of 1.81. Therefore, Staff recommends approval for the inclusion of the proposed occupancy sensors into the Existing Facilities and Schools Programs' portfolios.

Staff found demand response lighting controls to be cost-effective with a ratio of 1.19. Therefore, Staff recommends approval for the inclusion of the proposed demand response lighting controls into the Existing Facilities and Schools Programs' portfolios.

Staff found flat-panel LED lighting to be cost-effective with ratios ranging from 1.11 to 1.63, with the lower ratio pertaining to installment of a 2x4 flat panel LED which is less than 40W, and the higher ratio pertaining to the installment of a 2x2 LED of 30W or more. Therefore, Staff recommends approval for the inclusion of the proposed flat-panel LED lighting measure into the Existing Facilities and Schools Programs' portfolios.

Staff found the fluorescent to smart LED panel conversions to be cost-effective with ratios ranging from 1.08 to 1.66, with the lower ratio representing conversion to a smart 2x4 LED less than 40W and the higher ratio representing conversion to a smart 2x2 LED panel of 30W or more.

Staff found the conversion from standard to smart LED panels cost-effective with a ratio of 1.43. Therefore, Staff recommends approval for the inclusion of the proposed fluorescent to smart LED panel conversions, as well as the standard flat LED panels to smart LED panel conversions, into the Existing Facilities and Schools Programs' portfolios.

Staff found high-efficiency battery chargers to be cost-effective with a ratio of 4.20. Therefore, Staff recommends approval for the inclusion of the proposed high-efficiency battery chargers into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff found high-efficiency indoor agriculture dehumidification to be cost-effective with ratios of 1.24 for dehumidifiers with energy factors greater than 3.5 and 1.46 for dehumidifiers with energy factors between 2.8 and 3.5. Therefore, Staff recommends approval for the inclusion of the proposed high-efficiency indoor agriculture dehumidification into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff found indoor agriculture LED lighting for the seeding stage and vegetative state to be cost-effective with a ratio of 2.67 and 1.95, respectively. Staff's cost-benefit analysis for the flowering stage resulted in a ratio 0.92. Although the ratio is below 1.0, Staff believes that there are benefits that are difficult to quantify and monetize that have a value greater than zero which should be considered in its analysis.[1] Staff's practice is to include an adder of up to 0.10 to the cost-benefit ratio. In this scenario, the resulting ratio is 1.02. Therefore, Staff recommends approval for the inclusion of the proposed indoor agriculture LED lighting measure into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff found indoor high bay HID to LED conversions to be cost-effective with ratios ranging from 1.36 to 1.66 for different wattages. Therefore, Staff recommends approval for the inclusion of the proposed indoor high bay HID to LED conversions into the Existing Facilities and Schools Programs' portfolios.

Staff found smart screw-in LED bulbs, when replacing screw-in incandescent bulbs, to be cost-effective with a ratio of 3.61. Therefore, Staff recommends approval for the inclusion of the proposed smart screw-in LED bulbs into the Existing Facilities and Schools Programs' portfolios.

Staff found HVAC thermal energy storage systems to be cost-effective with a ratio of 1.65. Therefore, Staff recommends approval for the inclusion of the proposed HVAC thermal energy storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff found refrigeration thermal storage systems to be cost-effective with a ratio of 1.62. Therefore, Staff recommends approval for the inclusion of the proposed refrigeration thermal storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff found water source heat pumps to be cost-effective with ratios ranging from 1.16 to 1.98. Therefore, Staff recommends approval for the inclusion of the proposed water source heat pumps into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

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[1] Staff Report filed April 27, 2017, in Docket No. E-01345A-15-0182.

C. Demand Side Management Initiatives (both Residential and Non-Residential)

Energy Storage and Load Management ("Rewards") Pilot

Description

The Energy Storage and Load Management Pilot, currently being marketed as "Rewards" is an initiative which utilizes the deployment of residential load management, demand response, and energy storage technologies that allow APS residential and non-residential customers to shift energy use and manage peak demand while also providing system peak reductions. As approved in Decision No. 77763, the initiative consolidates the previously separate Load Management Technologies Pilot and the Transmission and Distribution Pilot into a single combined initiative.

The program includes three elements: battery storage, thermal storage, and smart thermostat demand response. The program focuses on optimizing the potential benefits of these technologies in helping customers manage peak demand meeting APS's flexible resource needs.

Modifications

APS intends to continue implementing the Rewards Pilot and is increasing the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season. Additionally, the Company seeks to clarify that the Cool Rewards demand response events are dispatched as a system resource, and while events generally follow APS's on-peak periods for retail rates, they are permitted to be dispatched outside of on-peak rate periods based on system needs. The Company notes in its application that given the Commission ordered transition to the new on-peak hours of 4-7 p.m., from 3-8 p.m., Cool Rewards events are likely to extend to 8 p.m. based on typical historical summer resource needs.

Staff Recommendations

Staff recommends approval of the continued implementation of the Rewards Pilot. Staff also recommends approval of the proposed increase in the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season, as the modification does not impact cost-effectiveness. In addition, Staff recommends that APS be able to dispatch demand response events outside of on-peak periods, as necessary, based on system needs.

EV Charging Demand Management Pilot

Description

The EV Charging Demand Management Pilot ("EV Pilot") was approved in Decision No. 77763. This EV Pilot involves vehicle fleets, charging station infrastructure, and individual EV owners to gather data on EV charging behavior and to encourage off-peak charging to manage peak demand. The EV Pilot targets all EV owners within APS's service territory and includes the

following elements: EV Charging Baseline Data, Beneficial Charging Behavior, and EV Charging Station Direct Load Control.

The program currently offers a one-time incentive of $250 for a limited number of smart Wi-Fi connected residential Level 2 EV charging stations that can be connected to provide telemetry data on home charging behavior as well as participate in load shifting participation and demand response events. APS also offers an incentive of $85 per year to customers who agree to provide APS with their vehicle charging data.

Modifications

APS is proposing to implement a new fleet advisory service for commercial fleet owners which provides cost-benefit analysis and other information regarding the economics associated with converting to electric vehicles. The fleet advisory service will also recommend charging infrastructure, rate plans, and optimal charging schedules to manage peak demand.

Staff Recommendations

Staff recommends approval for implementation of the proposed fleet advisory service for commercial fleets.

Tribal Communities Energy Efficiency Program

Description

APS's Tribal Communities Energy Efficiency Program ("Tribal Program"), ordered in Decision No. 77763, serves the Hopi and Navajo tribal communities impacted by the closure of coal-fired power plants that APS owns or operates, including Navajo Generating Station, Four Corners Power Plant, and Cholla Power Plant. The program provides free weatherization and energy efficiency equipment upgrades to tribal member homes and businesses, as well as do-it-yourself weatherization training for community members.

Decision No. 78052 approved an increase in the program's budget from $500,000 to at least $1,000,000 annually. It also required APS to make all reasonable efforts to offer solar, storage, distributed solar and storage, and beneficial electrification measures as it implements the expanded Tribal Program. Decision No. 78164 ordered APS to implement the expanded program and include it in its 2022 DSM Plan.

Pursuant to Decision No. 77763, the Tribal Program is not subject to a cost-benefit analysis; however, APS plans to continue to monitor and evaluate program activities and report the impacts and cost-effectiveness of the program including the new elements approved in Decision No 78052.

Modifications

APS is proposing that the Tribal Program's annual budget be roughly split between (a) EE projects that serve individual homes or businesses and (b) community solar, storage,

electrification, and EE projects designed to benefit the community as a whole. The 2022 DSM Plan further proposes that the funding dedicated to individual customers be equally split between residential and non-residential customers.

Staff Recommendations

Staff recommends approval of the proposal to roughly split the Tribal Program annual budget between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole.

Staff further recommends approval for the funding dedicated to individual customers to be equally split between residential and non-residential customers.

ENERGY SAVINGS

In 2022, APS forecasts that the 2022 DSM Plan will provide an estimated total energy savings of almost 7,194,690 megawatt-hours ("MWh") by the end of 2022, which represents approximately 25 percent of the Company's adjusted 2021 retail sales. Table 1 provides a breakdown of the projected energy savings.

Table 1

Source of projected Savings	Projected Savings
Residential Programs	114 MW/164,000 MWh
Non-Residential Programs	61 MW/207,000 MWh
DSM Initiatives	281 MW/34,000 MWh
Total Estimated First Year Energy Savings	405,000 MWh
Total Cumulative Savings to Date - Utilizing Application Estimate (Includes credit for Pre-EE Rules savings)	6,789,690 MWh
Total Cumulative Savings to Date - Utilizing 2021 Annual Report MER Verified Estimate (Includes credit for Pre-EE Rules savings)	6,886,838 MWh
Total Estimated Cumulative Savings by the End of 2022 – Utilizing Application Estimate	7,194,690 MWh
Total Estimated Cumulative Savings by the End of 2022 – Utilizing 2021 Annual Report MER Verified Estimate	7,291,838 MWh

DSM BUDGET

Table 2 shows the proposed 2022 total DSM budget amounts proposed by APS.

Table 2

	APS-proposed Budget
Program Costs	$71,313,604
Measurement, Evaluation & Research	$3,106,000
Performance Incentive	$3,957,654
Total 2022 DSM Budget	$78,377,257*

*Difference due to rounding

Table 3 shows the 2021 approved budget, APS's actual spending in 2021 (from the 2021 Annual DSM Report, filed on March 1, 2022), and the APS's proposed budget for 2022.

Table 3

Program	Commission-Approved 2021 Budget	2021 Actual Expenditures	APS Proposed 2022 Budget
Residential			
Existing Homes	$8,809,134	$4,002,797	$9,195,052
New Residential Construction	$3,335,000	$2,898,662	$4,650,000
Multi-Family Energy Efficiency	$1,565,000	$896,815	$1,915,994
Limited Income Weatherization	$7,000,000	$7,979,215	$7,000,000
Conservation Behavior	$2,108,800	$789,994	$2,456,688
Energy Storage Pilot	$1,000,000	$168,472	$1,700,000
Shade Trees	-	-	$400,000
Total Residential	**$23,817,934**	**$16,735,955**	**$27,317,734**
Non-Residential Programs (Solutions for Business)			
Existing Facilities	$11,169,072	$7,944,921	$9,809,404
New Construction and Major	$2,148,740	$6,845,641	$6,732,674
Energy Information Services	$329,500	$172,460	$274,000
Schools	$1,994,244	$1,880,651	$2,117,260
ARC Pilot	-	$140,480	$1,526,250
Total Non-Residential	**$15,641,556**	**$16,984,153**	**$20,459,587**
DSM Initiatives (both Residential and Non-Residential)			
Demand Response	$3,544,026	$1,007,993	$3,594,026
Energy Storage and Load Management	$12,642,964	$9,571,935	$12,133,964
Building Code and Appliance	$100,000	$90,701	$100,000
APS System Savings	$0	$0	$0
Managed EV Charging Pilot	$412,000	$111,889	$1,506,901
Energy and Demand Education	$4,050,000	$5,303,884	$5,140,335
Tribal Community Energy Efficiency	$1,000,000	$365,308	$1,061,056
Totals DSM Initiatives	**$21,748,990**	**$16,451,710**	**$23,536,282**
Cumulative Programmatic Expenditure	**$61,208,480**	**$50,171,818**	**$71,313,604**
Measurement, Evaluation & Research	**$3,006,000**	**$2,327,440**	**$3,106,000**
Total DSM Portfolio	**$64,214,480**	**$52,499,258**	**$74,419,604**

Table 4 shows APS's 2022 DSM program costs by spending category.

Table 4

Program	Rebates and Incentives	Program Implementation	Program Marketing	Planning and Administration	Training/ Technical Assistance	Consumer Education	Financing	Total Program Costs
Residential								
Existing Homes	$7,129,360	$1,269,500	$55,000	$316,192	$425,000	$0	$0	$9,195,052
New Residential Construction	$3,845,000	$490,000	$20,000	$275,000	$20,000	$0	$0	$4,650,000
Multi-Family Energy Efficiency	$1,001,994	$355,000	$54,000	$105,000	$220,000	$180,000	$0	$1,915,994
Limited Income Weatherization	$6,155,500	$308,500	$0	$235,000	$51,000	$250,000	$0	$7,000,000
Conservation Behavior	$0	$2,356,688	$0	$100,000	$0	$0	$0	$2,456,688
Energy Storage Pilot	$1,300,000	$256,150	$43,850	$100,000	$0	$0	$0	$1,700,000
Shade Trees	$200,000	$80,000	$50,000	$35,000	$5,000	$30,000	$0	$400,000
Totals for Residential	$19,631,854	$5,115,838	$222,850	$1,166,192	$721,000	$460,000	$0	$27,317,734
Non-Residential								
Existing Facilities	$4,803,404	$2,626,000	$460,000	$400,000	$1,400,000	$120,000	$0	$9,809,404
New Construction and Major Renovation	$4,905,674	$1,410,000	$75,000	$92,000	$180,000	$70,000	$0	$6,732,674
Energy Information Services	$94,000	$150,000	$10,000	$5,000	$15,000	$0	$0	$274,000
Schools	$1,162,260	$750,000	$30,000	$45,000	$90,000	$40,000	$0	$2,117,260
ARC Pilot	$1,206,250	$175,000	$75,000	$15,000	$30,000	$25,000	$0	$1,526,250
Totals for Non-Residential	$12,171,588	$5,111,000	$650,000	$557,000	$1,715,000	$255,000	$0	$20,459,588
Demand Side Management Initiatives								
Demand Response	$0	$3,385,000	$5,000	$204,026	$0	$0	$0	$3,594,026
Energy Storage and Load Management ("Rewards")	$7,362,000	$4,251,964	$50,000	$470,000	$0	$0	$0	$12,133,964
Building Code and Appliance Standards	$0	$30,000	$0	$10,000	$60,000	$0	$0	$100,000
APS System Savings	$0	$0	$0	$0	$0	$0	$0	$0

Managed EV Charging Pilot	$375,001	$881,900	$100,000	$135,000	$10,000	$5,000	$0	$1,506,901
Energy and Demand Education	$0	$3,151,335	$800,000	$274,000	$685,000	$230,000	$0	$5,140,335
Peak Rewards	$0	$0	$0	$0	$0	$0	$0	$0
Tribal Community Energy Efficiency	$854,851	$141,205	$65,000	$0	$0	$0	$0	$1,061,056
Totals for DSM Initiatives	**$8,591,852**	**$11,841,404**	**$1,020,000**	**$1,093,026**	**$755,000**	**$235,000**	**$0**	**$23,536,282**
Segment Totals	**$40,395,294**	**$22,068,242**	**$1,892,850**	**$2,816,218**	**$3,191,000**	**$950,000**	**$0**	**$71,313,604**

Staff Recommendation

PERFORMANCE INCENTIVE

APS is requesting a performance incentive for delivering cost-effective DSM programs which provide measurable net benefits for customers. The Company did not request a performance incentive in its 2021 DSM Plan.

The performance incentive is calculated based on the amount of energy saved and the amount of net benefits (total program benefits minus total program costs). The performance incentive structure, originally approved in Decision No. 69663 and modified in Decision Nos. 71448 and 74406, is described in the Company's Commission-approved DSM Plan of Administration ("POA"). It is a tiered system based upon the Company's achievement of established EE goals, which determines the percentage of net benefits for which the Company is allowed to request recovery. The amount allowed to be requested under the performance incentive is capped at $0.0125 per kWh saved. The performance incentive calculation does not include net benefits from the Codes and Standards or APS System Savings initiatives. Table 5 shows the proposed performance incentive calculation.

Table 5

Achievement Relative to EE Goals	Performance Incentive as % of Energy Efficiency Net Benefits	Performance Incentive Cap
<85%	0%	$0.0125 per kWh saved
85% to 95%	6%	
96% to 105%	7%	
>105%	8%	
Energy Savings (kWh)	**405,000,000**	
Percent of EE Goals	100%	

	Net Benefits	Performance Incentive Cap
Incentive %	7%	$0.0125 per kWh saved
2022 DSM Plan	$56,537,910	
Calculated Incentive	$3,957,654	$5,062,500

According to the Company, the calculation of 405,000,000 kWh as the figure for achieving 100 percent of its 2022 EE savings goal is based upon achieving 1.4 percent of 2021 adjusted retail sales. With the Company's estimated EE savings achieving 100 percent of the outlined goal, the Company is requesting to recover 7 percent of the estimated net benefits, which totals $3,957,654.

Staff Recommendations

Staff recommends approval of the recovery of the Company's requested performance incentive of $3,957,654 which it is permitted to request under its current Commission-approved DSM POA.

DEMAND-SIDE MANAGEMENT ADJUSTMENT CHARGE

APS's proposed total budget is $78,377,257 for 2022 with an amount of $51,765,538 to be recovered through the Demand-Side Management Adjustment Charge ("DSMAC"). The increase in the total budget and the DSMAC collection amount results in an increase in the current DSMAC rates approved in Decision No. 78164 from $0.001374 per kWh and $0.508 per kW to $0.001726 per kWh and $0.637 per kW. Table 6 shows the 2022 revenue requirement to be recovered through the DSMAC proposed by APS and Staff.

Table 6

	Proposed
Total APS 2022 DSM Budget	**$78,377,257**
less Amount Recovered in Base Rates	($20,000,000)
less Collected and Allocated to Rewards Initiative*	($384,863)
less Collected but Unspent Funds	($5,874,166)
Subtotal	**$52,118,229**
less Gain on Sale of Assets Balance	($352,690)
Total Revenue Requirement from DSMAC (assumes a 12-month collection period)	**$51,765,538**

*Pursuant to Decision No. 76313

The estimated monthly bill impact for residential customers using an average of 1,050 kWh per month would be approximately $0.37.

Staff Recommendations

Staff recommends approval of $51,765,538 to be collected through the DSMAC. In addition, Staff recommends approval of the updated DSMAC rates of $0.001726 per kWh and $0.637 per kW.

REQUESTS FOR WAIVERS

In response to Staff inquiry, APS confirmed its desire to continue its ability to shift up to 50 percent of budgeted funds between program segments and its ability to increase or decrease incentives as previously approved by the Commission. This would allow APS to respond to market changes, customer behavior and program needs in a more efficient manner. Funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program are prohibited from being moved to other programs.

Staff Recommendations

Staff recommends that APS be allowed to continue its ability to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission. In addition, Staff recommends that APS be allowed to continue its ability to increase or decrease incentives with a 60-day notice to the Commission. Staff further recommends that funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program are prohibited from being moved to other programs.

SUMMARY OF STAFF RECOMMENDATIONS

Staff recommends approval of the proposed continuation of the COVID-19 Quality Installation incentive of $1,000 per unit for all qualifying SEER 14 units, and $1,200 per unit for all qualifying equipment 15 SEER and above as part of the Existing Homes Program.

Staff recommends approval of the inclusion of the $50 incentive for qualifying Real Time Energy Monitoring Devices as part of the EHP.

Staff recommends approval of the proposed increased incentive, of $270 per home, for new ENERGY STAR® all-electric homes which meet program requirements relative to the existing $200 per home incentive for new ENERGY STAR® dual-fuel homes.

Staff recommends approval of APS's relaunching of event-based behavioral messages on peak days, as part for the residential Conservation Behavior Program.

Staff recommends approval of the proposed EC motors in HVAC air handlers within the Multifamily Energy Efficiency Program.

Staff recommends approval of the proposed EC motor bathroom exhaust fans within the Multifamily Energy Efficiency Program.

Staff recommends approval of the proposed occupancy sensors for common areas within the Multifamily Energy Efficiency Program.

Staff recommends approval for the inclusion of the previously approved EV pre-wire measure as a measure within the Multifamily Energy Efficiency Program portfolio.

Staff recommends approval for the consolidated reporting of energy savings achieved in multifamily properties (including both residential units as well as their non-residential common areas) within the Multifamily Energy Efficiency Program.

Staff recommends approval of the proposed continuation of the increased per home spending cap of $9,000 until further Order of the Commission, for the Low-Income Weatherization Program.

Staff recommends approval for the reintroduction of the Shade Tree Program into APS's Residential DSM portfolio.

Staff recommends approval for the inclusion of the proposed CO_2 Sensors into the Existing Facilities Program portfolio.

Staff recommends approval for the inclusion of the proposed outside air economizers into the Existing Facilities Program portfolio.

Staff recommends approval for the inclusion of the proposed occupancy sensors into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed demand response lighting controls into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed flat-panel LED lighting measure into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed fluorescent to smart LED panel conversions, as well as the standard flat panel to smart LED panel conversions, into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed high-efficiency battery chargers into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed high-efficiency indoor agriculture dehumidification systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed indoor agriculture LED lighting measure into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed indoor high bay HID LED conversions into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed smart screw-in LED bulbs into the Existing Facilities and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed HVAC thermal energy storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff recommends approval for the inclusion of the proposed refrigeration thermal storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Non-Residential Programs' portfolios.

Staff recommends approval for the inclusion of the proposed water source heat pumps into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Staff recommends approval for the continued implementation of the Rewards Pilot and the proposed increase in the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season. In addition, Staff recommends that APS be able to dispatch demand response events outside of on-peak periods, as necessary, based on system needs.

Staff recommends approval for implementation of the newly proposed fleet advisory service for commercial fleets in the EV Charging Demand Management Pilot.

Staff recommends approval of the proposal to roughly split the Tribal Energy Efficiency Program annual budget between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole.

Staff recommends approval for the funding dedicated to individual customers to be equally split between residential and non-residential customers.

Staff recommends approval of the total 2022 DSM Plan Budget of $78,377,257 with $51,765,538 to be collected through the DSMAC.

Staff recommends approval for the collection of the calculated performance incentive amount of $3,957,654.

Staff recommends approval of the updated DSMAC rates of $0.001726 per kWh and $0.637 per kW.

Staff recommends that APS be allowed to continue its ability to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission.

Staff recommends that APS be allowed to continue its ability to increase or decrease incentives with a 60-day notice to the Commission.

Staff recommends that funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program be prohibited from being moved to other programs.

Staff recommends that the 2022 DSM Plan, total budget, performance incentive, DSMAC collection amount, and surcharge amounts approved herein remain in effect until further Order of the Commission

Elijah O. Abinah
Director
Utilities Division

EOA:RK:jn\MAS

ORIGINATOR: Ryan Kern

On this 31st day of October, 2022, the foregoing document was filed with Docket Control as a Utilities Division Memorandum & Proposed Order, and copies of the foregoing were mailed on behalf of the Utilities Division to the following who have not consented to email service. On this date or as soon as possible thereafter, the Commission's eDocket program will automatically email a link to the foregoing to the following who have consented to email service.

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Jackie Neese
Executive Assistant

BEFORE THE ARIZONA CORPORATION COMMISSION

LEA MÁRQUEZ PETERSON
Chairwoman
SANDRA D. KENNEDY
Commissioner
JUSTIN OLSON
Commissioner
ANNA TOVAR
Commissioner
JIM O'CONNOR
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR A RULING RELATING TO ITS 2022 DEMAND SIDE MANAGEMENT IMPLEMENTATION PLAN.	DOCKET NO. E-01345A-21-0087 DECISION NO. _____ ORDER

Open Meeting
November 9 and 10, 2022
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

BACKGROUND

1. On December 17, 2021, APS filed with the Arizona Corporation Commission ("Commission") an application for approval of its 2022 Demand Side Management ("DSM") Implementation Plan ("2022 DSM Plan") pursuant to the Arizona Administrative Code ("A.A.C.") R14-2-2401 through R14-2-2419 ("EE Rules").

2022 DSM PLAN

2. The APS 2022 DSM Plan proposes to continue the current Commission-approved DSM portfolio of measures or programs targeted to multiple customer segments that were approved in the 2021 DSM Plan. APS states that the Company intends to continue the current incentive levels approved in the 2021 DSM Plan "...unless otherwise specified herein." The APS 2022 DSM Plan

also proposes to continue to offer its approved measures or programs designed specifically to assist customers who have been impacted by the COVID-19 pandemic.

3. The focus of the Commission Utilities Division Staff's ("Staff") review is on new, modified, and/or expanded measures and programs proposed in APS's 2022 DSM Plan. Therefore, Staff did not conduct cost-benefit analyses for measures or programs previously approved by the Commission. For measures or programs in which Staff conducted a cost-benefit analysis, Staff performed its analysis in accordance with A.A.C. R14-2-2412(B), which requires that the Societal Test be used for determining cost-effectiveness of DSM measures or programs. Under the Societal Test, for a program or measure to be considered cost-effective, the ratio of benefits to costs must be greater than one. Staff used this method to determine if a program or measure is cost-effective.

4. The table below shows the current Commission-approved programs included in APS's DSM Portfolio:

Residential Programs
Existing Homes Program
Residential New Construction Program
Conservation Behavior Program
Multifamily Energy Efficiency Program
Limited Income Weatherization Program*
Residential Battery Pilot*
Non-Residential Programs (Solutions for Business)
Existing Facilities Program
New Construction and Major Renovation Program
Schools Program
Energy Information Services Program
Advanced Rooftop Control (ARC) Pilot*

DSM Initiatives (both Residential and Non-Residential)
Building Codes and Appliance Standards Initiative*
Demand Response Programs*
Rewards Energy Storage and Load Management Initiative
APS System Savings*
Energy and Demand Education*
EV Managed Charging Pilot
Peak Solutions Initiative*
Tribal Communities Energy Efficiency Program

*APS is not proposing any modifications to these programs. Therefore, Staff did not include discussion of these programs in its report.

5. In addition to the modifications being proposed by APS to its existing programs, the Company has proposed to reintroduce as well as add programs to its current Residential and DSM Initiatives Portfolio. The programs being proposed for reintroduction and addition are shown in the table below:

Residential Programs
Shade Tree Program
DSM Initiatives (both Residential and Non-Residential)
Distributed Demand-Side Resource ("DDSR") Aggregation Tariff

Residential Programs

Existing Homes Program

Description

6. The Existing Homes Program ("EHP") combines LED lighting, energy-efficient smart thermostats, energy-efficient Heating, Ventilation, Air Conditioning ("HVAC") equipment, and Home Performance with ENERGY STAR® offering into one comprehensive program. The program encourages residential customers to purchase energy-efficient products, the proper installation of energy-efficient HVAC equipment, and promotes a whole house approach to energy

efficiency. Additionally, after approval of APS's 2020 DSM Plan (Decision No. 77763), the Company has increased incentives related to emergency HVAC replacements, for qualifying customers, in response to the socioeconomic impacts of the COVID-19 pandemic. The current EHP structure was approved in Decision No. 78164.

Modifications

7. APS is proposing to continue the increased funding for both higher incentive levels and modified program requirements for qualifying emergency HVAC replacements approved in Decision 77763 and continued in Decision No. 78164. The COVID-19 Quality Installation incentive will continue at $1,000 per unit for all qualifying 14 Seasonal Energy Efficiency Ratio ("SEER") units, and $1,200 per unit for all qualifying equipment 15 SEER and above. The conditions of the increased COVID-19 Quality Installation incentives are as follows:

a. The HVAC unit must be an emergency replacement of existing HVAC equipment that has failed or is failing. The incentive does not apply to early replacement of working equipment or to new HVAC units that are not replacing existing equipment.

b. Customers must self-attest that they have become unemployed due to the COVID-19 pandemic, or customers must meet the eligibility guidelines for the Company's Energy Support program (E-3) or Energy Support with Medical program (E-4). To receive the increased incentives, participants will be required to sign a form that confirms they meet the program qualifications.

c. HVAC units may be replaced until funding is no longer available or until the Commission approves discontinuation of the additional COVID-19 funding.

d. Customers must meet all other current program requirements.

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8. In addition, as part of the EHP, along with the continued COVID-19 Quality Installation modifications, APS is proposing to incorporate a $50 incentive for qualifying Real Time Energy Monitoring Devices, which were approved as part of the Conservation Behavior Program in Decision No. 77763. Its inclusion will allow the measure to be offered and installed by participating Home Performance with ENERGY STAR® contractors.

9. Staff notes that customers who are not eligible to receive the increased Quality Installation incentives related to the COVID-19 pandemic may still be eligible to receive a $200 Quality Installation incentive if they meet all other current program requirements.

Staff Recommendations

10. Staff recommends approval of the proposed continuation of the COVID-19 Quality Installation incentive of $1,000 per unit for all qualifying SEER 14 units, and $1,200 per unit for all qualifying equipment 15 SEER and above as part of the Existing Homes Program. The expanded incentive levels do not impact cost-effectiveness. In addition, Staff believes that it is appropriate to continue the enhanced program offerings related to COVID-19, especially in light of inflationary pressures which impact low-moderate income and unemployed customers more acutely.

11. Furthermore, Staff recommends approval of the proposal to include the $50 incentive for qualifying Real Time Energy Monitoring Devices as part of the Existing Homes Program as it has no impact on cost-effectiveness. Rather, its incorporation into the EHP portfolio will likely augment the EE savings realized by the technology.

Residential New Construction Program

Description

12. The Residential New Construction Program promotes high-efficiency construction practices for new homes. The program offers incentives to builders that meet energy efficiency requirements. The program is based on the Environmental Protection Agency's ("EPA") ENERGY STAR® version 3 new homes certification and includes additional energy efficiency requirements. The program also includes builder incentives to install connected electric water heaters, HVAC ducting in conditioned spaces, and Electric Vehicle ("EV") Ready pre-wiring. EV Ready pre-wiring

accommodates future installation of EV charging stations. The current Residential New Construction Program structure was approved in Decision No. 78164.

Modifications

13. APS is proposing to pay proportionally higher incentives for new all-electric ENERGY STAR® homes that generate greater annual kilowatt-hour ("kWh") savings than comparable dual-fuel homes. The Company would continue to offer $200 per home for dual-fuel homes that meet program requirements; and begin offering an incentive of $270 per home for all-electric homes which meet program requirements and offer increased kWh savings. The difference in proposed incentive levels was calculated based upon the proportional difference in average kWh savings of a new ENERGY STAR® all-electric home compared to a new ENERGY STAR® dual-fuel home.

Staff Recommendations

14. Staff recommends approval of the proposed increased incentive, of $270 per home, for new ENERGY STAR® all-electric homes which meet program requirements relative to the existing $200 per home incentive for new ENERGY STAR® dual-fuel homes. The increased incentive level for new ENERGY STAR® all-electric homes, to reflect their average additional energy savings, does not impact the cost effectiveness of the measure.

Conservation Behavior Program

Description

15. The Conservation Behavior Program provides participating customers with information intended to motivate them to adopt energy conservation behaviors. The program provides direct-mailed, emailed, and/or online reports to participants that show how the energy usage in their homes compares with energy-efficient homes and other similar homes. In addition to providing these benchmarks, the reports also highlight energy efficiency measures and actions participants can take to improve the energy efficiency of their homes and save on energy costs, including a Plan Coach feature for customers on time-of-use ("TOU") rates that helps them learn how to save through shifting more of their energy consumption to off-peak periods.

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Modifications

16. APS is proposing to resume behavioral demand response via the usage of event-based behavioral messages on peak days to encourage greater EE savings during periods of peak summer energy demand. Behavioral demand response with event-based messaging on peak days was previously approved with Decision No. 75679 but was paused while the Company sought additional channels through which to motivate customers to decrease their energy consumption and shift portions of their energy use off-peak, and provide customers with the information and tools to do so. The Company has found the program to be cost-effective.

Staff Recommendations

17. Staff recommends approval of APS's relaunching of event-based behavioral messages on peak days. The measure's pausing in 2017 was not the result of any issues related to cost-effectiveness, but rather the Company's shifting of efforts towards the development of TOU Plan Coach reports and Home Energy Report messages during its transition to new rates in 2017-2018. The measure was found to be cost-effective and has been implemented by a number of utilities which the Company has researched in its deliberations regarding the measure.

Multifamily Energy Efficiency Program

Description

18. The Multifamily Energy Efficiency Program ("MEEP") encourages efficiency improvements of multifamily properties and dormitories by using a two-track approach intended to target existing and new construction multifamily buildings. Track one targets existing multifamily properties providing direct-install retrofit measures at no cost to the existing multifamily community. However, the direct-install measures must be installed by facility personnel. In addition, this track offers energy assessments to help identify additional energy savings opportunities and available APS rebates within the multifamily complex but outside of the individual dwelling units (such as common area buildings, swimming pools, outdoor lighting, and laundries). Track two is for new construction/major renovation that offers a per-dwelling incentive for projects that build or renovate to a higher level of efficiency. Incentives increase as a higher level of efficiency is achieved. The current MEEP structure was approved in Decision No. 78164.

Modifications

19. APS is proposing to add three new measures to the program which are intended to provide expanded savings opportunities for APS customers who reside in multifamily properties including: Electronically Communicated ("EC") motors in HVAC air handlers, EC motors in bathroom exhaust fans, and occupancy sensors for common areas. The summary and details regarding MEEP proposed new measures are included below:

a. The installation of EC motors in HVAC handlers is intended to replace existing Permanent Split Capacitor ("PSC") motors. EC motors provide energy efficiency savings not only through their decreased demand for operation relative to PSC motors, but also through better matching the air flow provided to the HVAC system in relation to its heating or cooling British thermal unit ("Btu") demand at any moment. APS is proposing to offer a $75 per horse-power incentive for the installation of an EC motor within a new or existing HVAC air handler.

b. EC motors in Bathroom Exhaust Fans are an efficient alternative to new standard-efficiency exhaust-only ventilation fans. Energy savings are achieved through reductions in run-time as a result of electronic monitoring components, in fans with EC motors, which operate only when needed and at the optimal repetitions-per-minute ("RPM") setting at a given point in time. Additionally, the Company is currently implementing approved measures covering EC motors for fan and ventilation purposes within its non-residential portfolio. APS is proposing to offer a $4 per EC motor installed within bathroom exhaust fans with up to 200 cubic feet per minute capacity.

c. The usage of occupancy sensors, in relation to lighting, allows the lighting for a targeted space to be automatically shut off when unoccupied. APS is proposing to include occupancy sensors into the MEEP portfolio to target the common areas of

multifamily housing complexes which do not have them installed. The Company is currently implementing an approved occupancy sensor measure, which targets hotel rooms, within its non-residential portfolio. APS is proposing a $30 per unit incentive for the installation of occupancy sensors within multifamily housing-complex common areas.

20. Additionally, APS intends to add the previously approved EV pre-wire measure into the multifamily program (currently included within Residential New Construction Program). Furthermore, following the approval for APS to streamline the implementation of its MEEP program using the same contractor who delivers the Solutions for Business program, APS proposes to consolidate the reporting of all savings achieved in multifamily properties (including both residential rental units and non-residential common areas) within the MEEP.

Staff Recommendations

21. Staff found the EC motors in HVAC air handlers to be cost-effective with a ratio of 1.77. Therefore, Staff recommends approval of the proposed EC motors in HVAC air handlers.

22. Staff found the EC motor bathroom exhaust fans to be cost-effective with a ratio of 1.08. Therefore, Staff recommends approval of the proposed EC motor bathroom exhaust fans.

23. Staff found the occupancy sensors for common areas to be cost-effective with a ratio of 1.10. Therefore, Staff recommends approval of the proposed occupancy sensors.

24. Additionally, Staff recommends approval for the inclusion of the previously approved EV pre-wire measure, which is currently available through the Residential New Construction Program, as a measure within the MEEP portfolio.

25. Furthermore, Staff recommends approval for the consolidated reporting of energy savings achieved in multifamily properties (including both residential units as well as their non-residential common areas) within the MEEP.

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Limited Income Weatherization Program

Description

26. The Limited Income Weatherization Program ("LIWP") provides support to residential customers who have the most difficulty affording their energy costs. The LIWP is designed to improve the energy efficiency, safety, and health attributes of homes occupied by customers whose income falls within 200 percent of the federal poverty level. The weatherization component offers various home improvement measures including cooling system repair and replacement, insulation, sunscreens, water heaters, window repairs and improvements, and other general household repairs. The LIWP is administered by various community action agencies throughout APS's service territory. The current LIWP structure was approved in Decision No. 78164.

Modifications

27. APS proposes to continue the increased per home spending cap of $9,000 "...until at least the end of the 2022." The budget approved Decision No. 78164 will allow APS to continue supporting a funding cap of $9,000 per home to provide support for larger efficiency projects, including emergency HVAC replacement and related repairs in cases where other assistance dollars may not be available.

Staff Recommendations

28. Decision No. 78164, continued the increased per home spending cap of $9,000 "until the end of 2021 for the Limited-Income Weatherization Program is approved until further Order of the Commission." In an effort to clarify the language in Decision No. 78164, Staff believes that the increased per home spending cap should continue as approved until further Order of the Commission. Therefore, Staff recommends that the program specifications approved in Decision No. 78164 continue until further Order of the Commission.

Shade Tree Program

Description

29. APS is proposing to reintroduce the Residential Shade Tree Program as part of its 2022 Residential Portfolio. The program's proposed reintroduction is in response to Commissioner

and stakeholder concerns about urban heat island impacts, heat resiliency and the lack of shade in disadvantaged communities. The Shade Tree Program was suspended in Decision No. 75323 (November 25, 2015) due to having an observed societal benefit to cost ratio of less than 1.0. However, the updated version of the program has been streamlined in various ways, targets less efficient existing homes and is being proposed at a time when the costs being avoided have increased due to statewide, national, and international macroeconomic circumstances.

30. The typical size of trees discounted by the program will be approximately ten-gallon pots but may vary depending on cost and availability. The incentives available for qualifying trees and planting locations will be offered on a sliding scale between 25 percent and 75 percent of tree costs depending on the residential areas being targeted, with higher levels of incentives being directed towards the planting of trees in disadvantaged communities. Participants may receive up to two discounted trees through the program, which applies to the following desert-adapted and low-water use trees: Thornless Palo Verde, Thornless Mesquite, Native Mesquite (with thorns), Desert Willow, and Willow Acacia.

Modifications

31. APS has identified a number of factors that will improve the cost effectiveness of the proposed program compared to its predecessor, including:

a. As a result of growing regional needs for future peak generation capacity, there is currently a higher avoided cost value for regional summer peak capacity which yield increased grid value and higher net benefits.

b. APS is proposing to streamline the educational provisions of the program as well as the acquisition of qualifying trees by customers. Previously, the program was implemented via the provision of on-site classes and facilitation of tree fulfilment events which required the transportation of trees to distribution event sites. Under the newly proposed program, classes and other educational materials will be made

available online, and customers will be provided with coupons for discounted qualifying trees at local retailers.

c. APS is proposing to target the program to disadvantaged communities in order to better reach older and more inefficient dwellings in areas which historically have lacked shade. This approach will yield both higher average energy savings and greater individual benefits for participating customers.

d. More optimal planting of trees will assure the achievement of projected individual and system energy savings via the installment of an application process which requires customers to provide details as to the intended location for the trees' planting.

Staff Recommendations

32. Staff found the Shade Tree program, with its modifications from previous implementation as well as updated research, to be cost-effective with a ratio of 1.62. Therefore, Staff recommends approval of the reintroduction of the Shade Tree program into APS's Residential DSM portfolio.

Non-Residential Programs (Solutions for Business)

Existing Facilities Program

Description

33. The Existing Facilities Program ("EFP") provides prescriptive incentives to owners and operators of non-residential facilities for DSM improvements in lighting, HVAC, motors, building envelope, and refrigeration measures. In addition, the EFP offers incentives for pilot electrification measures including forklifts, airport vehicles, and standby truck refrigeration. Further, the EFP also offers custom incentives that are evaluated individually based on energy savings.

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New Construction and Major Renovation Program

Description

34. The New Construction and Major Renovation ("NCMR") Program includes three components: (1) design assistance, (2) prescriptive measures, and (3) custom efficiency measures. Design assistance involves integration of energy efficiency into a customer's design process to influence equipment/systems selection specifications as early in the process as possible. Prescriptive and custom measures such as lighting, HVAC, motors, building envelope, and refrigeration are included. In addition, the New Construction custom efficiency measures component includes Whole Building Design which encourages customers, developers, and design professionals to design, build, and invest in higher performing buildings through a tiered performance incentive structure. Incentives increase as the building performance improves.

Schools Program

Description

35. The Schools Program sets aside funding for K-12 school buildings (public, private, and charter). The DSM measures and incentives available to schools are the same as those available for all non-residential programs including lighting and refrigeration. Once schools fully subscribe to the Schools Program, or once a school reaches the cap of $100,000 per year, schools can participate in other non-residential programs. Incentive levels are the same as for Existing Facilities (for existing school facilities) and New Construction (for new school construction and major renovations). APS also offers the same DSM measures in the Schools Program to qualifying non-profit community organizations.

Modifications for Non-Residential Programs:

36. APS is proposing to continue the enhanced incentives put in place due to the COVID-19 pandemic (originally approved with Decision No. 77763 and continued with Decision No. 78164) and provide up to 75 percent of the incremental costs associated with a qualifying emergency HVAC replacement. The Company proposes to continue the incentives through at least the end of 2022. Additionally, APS is proposing 15 new prescriptive measures to include, in a varying/staggered fashion, across the three non-residential programs. Both the proposal to continue augmented non-

residential HVAC incentives as well as add 15 new measures have application to more than one non-residential program. Therefore, the Modifications and Staff Recommendations sections were combined for the three non-residential programs.

37. Details concerning the increased incentives prompted by the COVID-19 pandemic, for qualifying non-residential HVAC emergency replacement, have not changed since their most recent Commission approval in Decision No. 78164.

38. The 15 new prescriptive measures being proposed by APS in its 2022 DSM Plan include:

- CO_2 Sensors
- Outside air economizers
- Occupancy Sensors
- Demand response lighting controls
- Flat-panel LED lighting
- Fluorescent to smart LED panel conversions
- High-efficiency battery chargers
- High-efficiency indoor agriculture
- Indoor agriculture LED lighting
- Interior high bay HID to LED conversions
- Smart LED lighting panels
- Smart screw-in LED bulbs
- HVAC thermal energy storage systems
- Refrigeration thermal storage systems
- Water source heat pumps

39. The following segment details the specifications of the measures concerning the technologies being utilized, their application to the various non-residential customer class, and the ratio of their cost-effectiveness under the Societal Test:

<u>Proposed Inclusion into Current Non-Residential Programs:</u>

- Existing Facilities, New Construction and Major Renovations, and Schools Programs:
  - High efficiency battery chargers
  - High-efficiency indoor agriculture dehumidification
  - Indoor agriculture LED lighting
  - HVAC thermal energy storage systems
  - Refrigeration thermal storage systems
  - Water source heat pumps
- *Existing Facilities and Schools Programs Only:*
  - Demand response lighting controls

- Flat-panel LED lighting
- Fluorescent to smart LED panel conversions
- Interior high bay HID to LED conversions
- Smart screw-in LED bulbs

- *Existing Facilities Program Only:*
  - Outside air economizers
  - Occupancy sensors

1) CO_2 Sensors

- Carbon dioxide ("CO2") sensors, for application with HVAC systems, monitor the levels of CO2 in a facility/space to modulate the outside air damper and adjust ventilation rates. The integration of CO2 sensors with HVAC operation serves to both ensure healthy air quality (at least as it relates to CO2) as well as optimize HVAC consumption to periods where the relevant space is being occupied and allows for savings available through dynamic air flow settings in typical HVAC systems. APS is proposing to offer a $200 per unit incentive for the installation of a CO2 sensor which communicates with facilities' HVAC systems.

2) Outside Air Economizers

- Outside air economizers can be integrated into new and existing HVAC systems setups and save energy by monitoring outside air temperatures and allowing outside air into a building in order to more optimally reach and maintain a set temperature point. This decreases the amount of run-time and energy usage by the existing HVAC system which will rely heavily on simply recirculating and heating/cooling a facility's air. Outside air economizers have already been approved within the ARC pilot ordered in Decision No. 78164, which combines their utilization with energy management systems and variable frequency drives. APS is proposing to offer a $50 per system

ton incentive for the installation of an air side economizer into new or existing non-residential HVAC systems.

3) Occupancy Sensors

- Occupancy sensors detect indoor activity within a certain targeted area. The sensors are able to save energy by turning lights off soon after an occupant has left the designated area which it is positioned to monitor. The technologies accounted for in APS's proposed measure include Passive Infrared ("PIR") sensors, ultrasonic sensors and XCT sensors. The Commission approved a similar measure pertaining to occupancy sensors for hotel rooms in Decision No. 78164. APS is proposing to offer an incentive of $20 per unit for the installation of a new occupancy sensor.

4) Demand Response Lighting Controls

- Demand response lighting controls reduce lighting demand by better optimizing the usage of lights in relation to areas in which activity is occurring. Such lighting control systems can more efficiently illuminate areas via potential real time usage and analytics for end users, operate with other building systems, and adapt/be easily reconfigured as space usage changes. APS is proposing to offer a $0.10 per square-foot (of impacted lighting space) incentive for the installation of demand response lighting controls within facilities.

5) Flat-panel LED Lighting

- The proposed flat-panel LED lighting measure is intended to replace existing, and inefficient, T8 linear fluorescent lamps with electronic ballasts. Flat Panel LEDs are more efficient, have a longer measure life, lower maintenance costs as well as provide additional environmental benefits. APS is proposing an incentive for customers of $15 per fixture for the conversion from T8 linear fluorescents to 2x2 or 2x4 flat panel LEDs.

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6) Fluorescent to Smart LED Panel Conversions

- Smart LED panels provide similar efficiency benefits, relative to fluorescent fixtures, as those included in the proposed Flat Panel LED measure, but with the added impacts of connectivity to broader energy management systems, automatic response to external lighting and occupancy conditions, and the ability to fine-tune lighting usage by gathering data on user behavior. APS is proposing an incentive for customers of $20 per fixture for the conversion of linear fluorescents to smart LED panels, and an incentive of $5 per fixture for the conversion of existing regular LED panels to smart LED panels.

7) High-Efficiency Battery Chargers

- Dehumidification systems are commonly used by indoor farming operations to provide the controlled growing conditions necessary to produce higher yields with less need for chemical fertilizers and pesticides. Due to the typical high usage of the dehumidification systems by indoor farming operations, adoption of high efficiency ENERGY STAR® systems can provide sizeable savings, especially coincident-peak savings, relative to less efficient systems. APS is proposing to offer $0.50 per pint of dehumidification capacity (per day) for systems with energy factors between 2.8 and 3.5; and $2.00 per pint of daily dehumidification capacity for systems with energy factors of 3.5 or greater.

8) High-Efficiency Indoor Agriculture Dehumidification

- Dehumidification systems are commonly used by indoor farming operations to provide the controlled growing conditions necessary to produce higher yields with less need for chemical fertilizers and pesticides. Due to the typical high usage of the dehumidification systems by indoor farming operations, adoption of high efficiency ENERGY STAR® systems can provide sizeable savings, especially coincident-peak savings, relative to less efficient systems. APS is proposing to offer $0.50 per pint of dehumidification capacity (per

day) for systems with energy factors between 2.8 and 3.5; and $2.00 per pint of daily dehumidification capacity for systems with energy factors of 3.5 or greater.

9) Indoor Agriculture LED Lighting

- The proposed measure by APS is intended to promote the adoption of higher efficiency LED lights which helps to more efficiently maintain optimal plant growth conditions. The energy savings can be substantial both regarding kWh consumption as well as peak demand reduction because indoor farmers are unable to shift consumption away from on-peak hours. Given that lighting demand varies among the stages of plant growth, APS is proposing a $0.10 per photosynthetic photon flux ("PPF") unit incentive during the seeding stage, $0.05 per PPF during the flowering stage, and $0.07 per PPF during the vegetative state. PPF gauges the amount of light being emitted which is utilized by plants for the process of photosynthesis.

10) Indoor High Bay HID to LED Conversions

- High-intensity discharge ("HID") lights produce light through the creation of an electrical arc formed between two metal conductors within an ionized gas. Such lights need to warm up to their full intensity due to the changing physical conditions inside the bulb. LED lights provide instantaneous full-intensity lighting as well as greater overall efficiency and wattage to lumen ratio, with LED lights being around 70 percent more efficient than HID lights. APS is proposing to offer per-fixture incentives for the conversion from HID to LED high-bay lighting, including: $20 for the conversion to LED high bay fixtures of 100 or fewer watts, $45 for the conversion to LED high bay fixtures of 200 or greater watts, and $25 for the conversion to LED high bay fixtures between 100 and 200 watts.

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11) Smart Screw-in LED Bulbs

- The smart screw-in LED bulb measure is intended to replace existing inefficient screw-in incandescent bulbs. Not only do smart screw-in LED bulbs carry improved operating efficiency relative to incandescent bulbs, but they are able to achieve additional energy savings as a result of being programmed/automated by customers through their smartphones and smart thermostats. APS is proposing a $6.00 per bulb incentive for the purchase and installation of a smart screw-in LED bulb which replaces an existing screw-in incandescent bulb.

12) HVAC Thermal Energy Storage Systems

- HVAC thermal energy storage systems allow for the freezing of water (or production of ice) during off-peak hours (typically at night), to be stored in large ice storage tanks and used in conjunction with the HVAC unit to cool facilities during the day and on-peak hours. According to APS, these thermal energy storage systems are typically sized to achieve partial load shifting capacity, allowing for smaller HVAC chiller components. APS is proposing to offer a $30.00 per ton-hour of system operation/consumption, for the installation/integration of thermal energy storage units with new or existing HVAC systems.

13) Refrigeration Thermal Storage Systems

- Thermal energy storage is also used for the purpose of refrigeration of spaces in order to consume less energy during peak times. Whether for large warehouses storing frozen and refrigerated foods, or walk-in freezing units, the freezing of ice or other phase-changing material in large tanks during off-peak times helps maintain necessary temperature levels with less reliance upon a facility's HVAC unit. APS is proposing an incentive of $350 per ton of system cooling capacity for the installment of refrigeration thermal energy storage systems.

14) Water-Source Heat Pumps

- Water source heat pumps ("WSHP") cool areas by absorbing thermal energy and transferring it away, whether into another water or air source, and vice versa for heating. A WSHP system can provide additional energy savings in facilities when the need for heating and cooling in different areas arise simultaneously; whereby water that is heated in order to cool one space is transferred to another in order to heat it. APS is proposing to offer a $2.00 per kBtu/h of system capacity for installment of a Tier 1 WSHP, and a $3.00 per kBtu/h of system capacity for the installment of a Tier 2 WSHP.

Staff Recommendations

40. Staff found CO2 sensors to be cost-effective with ratios ranging from 1.58 for the lowest scenario involving sensors for a large office setting to 3.57 for the highest scenario involving sensors for a strip mall setting. Therefore, Staff recommends approval for the inclusion of the proposed CO2 sensors into the Existing Facilities Program portfolio.

41. Staff found outside air economizers to be cost-effective with a ratio of 2.15. Therefore, Staff recommends approval for the inclusion of the proposed outside air economizers into the Existing Facilities Program portfolio.

42. Staff found occupancy sensors to be cost-effective with a ratio of 1.81. Therefore, Staff recommends approval for the inclusion of the proposed occupancy sensors into the Existing Facilities and Schools Programs' portfolios.

43. Staff found demand response lighting controls to be cost-effective with a ratio of 1.19. Therefore, Staff recommends approval for the inclusion of the proposed demand response lighting controls into the Existing Facilities and Schools Programs' portfolios.

44. Staff found flat-panel LED lighting to be cost-effective with ratios ranging from 1.11 to 1.63, with the lower ratio pertaining to installment of a 2x4 flat panel LED which is less than 40W, and the higher ratio pertaining to the installment of a 2x2 LED of 30W or more. Therefore, Staff recommends approval for the inclusion of the proposed flat-panel LED lighting measure into the Existing Facilities and Schools Programs' portfolios.

45. Staff found the fluorescent to smart LED panel conversions to be cost-effective with ratios ranging from 1.08 to 1.66, with the lower ratio representing conversion to a smart 2x4 LED less than 40W and the higher ratio representing conversion to a smart 2x2 LED panel of 30W or more.

46. Staff found the conversion from standard to smart LED panels cost-effective with a ratio of 1.43. Therefore, Staff recommends approval for the inclusion of the proposed fluorescent to smart LED panel conversions, as well as the standard flat LED panels to smart LED panel conversions, into the Existing Facilities and Schools Programs' portfolios.

47. Staff found high-efficiency battery chargers to be cost-effective with a ratio of 4.20. Therefore, Staff recommends approval for the inclusion of the proposed high-efficiency battery chargers into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

48. Staff found high-efficiency indoor agriculture dehumidification to be cost-effective with ratios of 1.24 for dehumidifiers with energy factors greater than 3.5 and 1.46 for dehumidifiers with energy factors between 2.8 and 3.5. Therefore, Staff recommends approval for the inclusion of the proposed high-efficiency indoor agriculture dehumidification into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

49. Staff found indoor agriculture LED lighting for the seeding stage and vegetative state to be cost-effective with a ratio of 2.67 and 1.95, respectively. Staff's cost-benefit analysis for the flowering stage resulted in a ratio 0.92. Although the ratio is below 1.0, Staff believes that there are benefits that are difficult to quantify and monetize that have a value greater than zero which should be considered in its analysis. Staff's practice is to include an adder of up to 0.10 to the cost-benefit ratio. In this scenario, the resulting ratio is 1.02. Therefore, Staff recommends approval for the inclusion of the proposed indoor agriculture LED lighting measure into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

50. Staff found indoor high bay HID to LED conversions to be cost-effective with ratios ranging from 1.36 to 1.66 for different wattages. Therefore, Staff recommends approval for the

inclusion of the proposed indoor high bay HID to LED conversions into the Existing Facilities and Schools Programs' portfolios.

51. Staff found smart screw-in LED bulbs, when replacing screw-in incandescent bulbs, to be cost-effective with a ratio of 3.61. Therefore, Staff recommends approval for the inclusion of the proposed smart screw-in LED bulbs into the Existing Facilities and Schools Programs' portfolios.

52. Staff found HVAC thermal energy storage systems to be cost-effective with a ratio of 1.65. Therefore, Staff recommends approval for the inclusion of the proposed HVAC thermal energy storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

53. Staff found refrigeration thermal storage systems to be cost-effective with a ratio of 1.62. Therefore, Staff recommends approval for the inclusion of the proposed refrigeration thermal storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

54. Staff found water source heat pumps to be cost-effective with ratios ranging from 1.16 to 1.98. Therefore, Staff recommends approval for the inclusion of the proposed water source heat pumps into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

Demand Side Management Initiatives (both Residential and Non-Residential)

Energy Storage and Load Management ("Rewards") Pilot

Description

56. The Energy Storage and Load Management Pilot, currently being marketed as "Rewards" is an initiative which utilizes the deployment of residential load management, demand response, and energy storage technologies that allow APS residential and non-residential customers to shift energy use and manage peak demand while also providing system peak reductions. As approved in Decision No. 77763, the initiative consolidates the previously separate Load Management Technologies Pilot and the Transmission and Distribution Pilot into a single combined initiative.

57. The program includes three elements: battery storage, thermal storage, and smart thermostat demand response. The program focuses on optimizing the potential benefits of these technologies in helping customers manage peak demand meeting APS's flexible resource needs.

Modifications

58. APS intends to continue implementing the Rewards Pilot and is increasing the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season. Additionally, the Company seeks to clarify that the Cool Rewards demand response events are dispatched as a system resource, and while events generally follow APS's on-peak periods for retail rates, they are permitted to be dispatched outside of on-peak rate periods based on system needs. The Company notes in its application that given the Commission ordered transition to the new on-peak hours of 4-7 p.m., from 3-8 p.m., Cool Rewards events are likely to extend to 8 p.m. based on typical historical summer resource needs.

Staff Recommendations

59. Staff recommends approval of the continued implementation of the Rewards Pilot. Staff also recommends approval of the proposed increase in the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season, as the modification does not impact cost-effectiveness. In addition, Staff recommends that APS be able to dispatch demand response events outside of on-peak periods, as necessary, based on system needs.

EV Charging Demand Management Pilot

Description

60. The EV Charging Demand Management Pilot ("EV Pilot") was approved in Decision No. 77763. This EV Pilot involves vehicle fleets, charging station infrastructure, and individual EV owners to gather data on EV charging behavior and to encourage off-peak charging to manage peak demand. The EV Pilot targets all EV owners within APS's service territory and includes the following elements: EV Charging Baseline Data, Beneficial Charging Behavior, and EV Charging Station Direct Load Control.

61. The program currently offers a one-time incentive of $250 for a limited number of smart Wi-Fi connected residential Level 2 EV charging stations that can be connected to provide

telemetry data on home charging behavior as well as participate in load shifting participation and demand response events. APS also offers an incentive of $85 per year to customers who agree to provide APS with their vehicle charging data.

Modifications

62. APS is proposing to implement a new fleet advisory service for commercial fleet owners which provides cost-benefit analysis and other information regarding the economics associated with converting to electric vehicles. The fleet advisory service will also recommend charging infrastructure, rate plans, and optimal charging schedules to manage peak demand.

Staff Recommendations

63. Staff recommends approval for implementation of the proposed fleet advisory service for commercial fleets.

Tribal Communities Energy Efficiency Program

Description

64. APS's Tribal Communities Energy Efficiency Program ("Tribal Program"), ordered in Decision No. 77763, serves the Hopi and Navajo tribal communities impacted by the closure of coal-fired power plants that APS owns or operates, including Navajo Generating Station, Four Corners Power Plant, and Cholla Power Plant. The program provides free weatherization and energy efficiency equipment upgrades to tribal member homes and businesses, as well as do-it-yourself weatherization training for community members.

65. Decision No. 78052 approved an increase in the program's budget from $500,000 to at least $1,000,000 annually. It also required APS to make all reasonable efforts to offer solar, storage, distributed solar and storage, and beneficial electrification measures as it implements the expanded Tribal Program. Decision No. 78164 ordered APS to implement the expanded program and include it in its 2022 DSM Plan.

66. Pursuant to Decision No. 77763, the Tribal Program is not subject to a cost-benefit analysis; however, APS plans to continue to monitor and evaluate program activities and report the impacts and cost-effectiveness of the program including the new elements approved in Decision No 78052.

Modifications

67. APS is proposing that the Tribal Program's annual budget be roughly split between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole. The 2022 DSM Plan further proposes that the funding dedicated to individual customers be equally split between residential and non-residential customers.

Staff Recommendations

68. Staff recommends approval of the proposal to roughly split the Tribal Program annual budget between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole.

69. Staff further recommends approval for the funding dedicated to individual customers to be equally split between residential and non-residential customers.

ENERGY SAVINGS

70. In 2022, APS forecasts that the 2022 DSM Plan will provide an estimated total energy savings of almost 7,194,690 megawatt-hours ("MWh") by the end of 2022, which represents approximately 25 percent of the Company's adjusted 2021 retail sales. Table 1 provides a breakdown of the projected energy savings.

Table 1

Source of projected Savings	**Projected Savings**
Residential Programs	114 MW/164,000 MWh
Non-Residential Programs	61 MW/207,000 MWh
DSM Initiatives	281 MW/34,000 MWh
Total Estimated First Year Energy Savings	405,000 MWh
Total Cumulative Savings to Date - Utilizing Application Estimate (Includes credit for Pre-EE Rules savings)	6,789,690 MWh
Total Cumulative Savings to Date - Utilizing 2021 Annual Report MER Verified Estimate (Includes credit for Pre-EE Rules savings)	6,886,838 MWh

Total Estimated Cumulative Savings by the End of 2022 – Utilizing Application Estimate	7,194,690 MWh
Total Estimated Cumulative Savings by the End of 2022 – Utilizing 2021 Annual Report MER Verified Estimate	7,291,838 MWh

DSM BUDGET

71. Table 2 shows the proposed 2022 total DSM budget amounts proposed by APS.

Table 2

	APS-proposed Budget
Program Costs	$71,313,604
Measurement, Evaluation & Research	$3,106,000
Performance Incentive	$3,957,654
Total 2022 DSM Budget	$78,377,257*

*Difference due to rounding.

72. Table 3 shows the 2021 approved budget, APS's actual spending in 2021 (from the 2021 Annual DSM Report, filed on March 1, 2022) and the APS's proposed budget for 2022.

Table 3

Program	**Commission-Approved 2021 Budget**	**2021 Actual Expenditures**	**APS Proposed 2022 Budget**
Residential			
Existing Homes	$8,809,134	$4,002,797	$9,195,052
New Residential Construction	$3,335,000	$2,898,662	$4,650,000
Multi-Family Energy Efficiency	$1,565,000	$896,815	$1,915,994
Limited Income Weatherization	$7,000,000	$7,979,215	$7,000,000
Conservation Behavior	$2,108,800	$789,994	$2,456,688
Energy Storage Pilot	$1,000,000	$168,472	$1,700,000
Shade Trees	-	-	$400,000
Total Residential	**$23,817,934**	**$16,735,955**	**$27,317,734**
Non-Residential Programs (Solutions for Business)			
Existing Facilities	$11,169,072	$7,944,921	$9,809,404
New Construction and Major Renovation	$2,148,740	$6,845,641	$6,732,674
Energy Information Services	$329,500	$172,460	$274,000
Schools	$1,994,244	$1,880,651	$2,117,260
ARC Pilot	-	$140,480	$1,526,250
Total Non-Residential	**$15,641,556**	**$16,984,153**	**$20,459,587**

	DSM Initiatives (both Residential and Non-Residential)		
Demand Response	$3,544,026	$1,007,993	$3,594,026
Energy Storage and Load Management	$12,642,964	$9,571,935	$12,133,964
Building Code and Appliance Standards	$100,000	$90,701	$100,000
APS System Savings	$0	$0	$0
Managed EV Charging Pilot	$412,000	$111,889	$1,506,901
Energy and Demand Education	$4,050,000	$5,303,884	$5,140,335
Tribal Community Energy Efficiency	$1,000,000	$365,308	$1,061,056
Totals DSM Initiatives	**$21,748,990**	**$16,451,710**	**$23,536,282**
Cumulative Programmatic	**$61,208,480**	**$50,171,818**	**$71,313,604**
Measurement, Evaluation & Research	**$3,006,000**	**$2,327,440**	**$3,106,000**
Total DSM Portfolio	**$64,214,480**	**$52,499,258**	**$74,419,604**

73. Table 4 shows APS's 2022 DSM program costs by spending category.

Table 4

Program	Rebates and Incentives	Program Implementation	Program Marketing	Planning and Administration	Training/ Technical Assistance	Consumer Education	Financing	Total Program Costs
Residential								
Existing Homes	$7,129,360	$1,269,500	$55,000	$316,192	$425,000	$0	$0	$9,195,052
New Residential Construction	$3,845,000	$490,000	$20,000	$275,000	$20,000	$0	$0	$4,650,000
Multi-Family Energy Efficiency	$1,001,994	$355,000	$54,000	$105,000	$220,000	$180,000	$0	$1,915,994
Limited Income Weatherization	$6,155,500	$308,500	$0	$235,000	$51,000	$250,000	$0	$7,000,000
Conservation Behavior	$0	$2,356,688	$0	$100,000	$0	$0	$0	$2,456,688
Energy Storage Pilot	$1,300,000	$256,150	$43,850	$100,000	$0	$0	$0	$1,700,000

Shade Trees	$200,000	$80,000	$50,000	$35,000	$5,000	$30,000	$0	$400,000
Totals for Residential	$19,631,854	$5,115,838	$222,850	$1,166,192	$721,000	$460,000	$0	$27,317,734
Non-Residential								
Existing Facilities	$4,803,404	$2,626,000	$460,000	$400,000	$1,400,000	$120,000	$0	$9,809,404
New Construction and Major Renovation	$4,905,674	$1,410,000	$75,000	$92,000	$180,000	$70,000	$0	$6,732,674
Energy Information Services	$94,000	$150,000	$10,000	$5,000	$15,000	$0	$0	$274,000
Schools	$1,162,260	$750,000	$30,000	$45,000	$90,000	$40,000	$0	$2,117,260
ARC Pilot	$1,206,250	$175,000	$75,000	$15,000	$30,000	$25,000	$0	$1,526,250
Totals for Non-Residential	$12,171,588	$5,111,000	$650,000	$557,000	$1,715,000	$255,000	$0	$20,459,588
Demand Side Management Initiatives								
Demand Response	$0	$3,385,000	$5,000	$204,026	$0	$0	$0	$3,594,026
Energy Storage and Load Management ("Rewards")	$7,362,000	$4,251,964	$50,000	$470,000	$0	$0	$0	$12,133,964
Building Code and Appliance Standards	$0	$30,000	$0	$10,000	$60,000	$0	$0	$100,000

APS System Savings	$0	$0	$0	$0	$0	$0	$0	$0
Managed EV Charging Pilot	$375,001	$881,900	$100,000	$135,000	$10,000	$5,000	$0	$1,506,901
Energy and Demand Education	$0	$3,151,335	$800,000	$274,000	$685,000	$230,000	$0	$5,140,335
Peak Rewards	$0	$0	$0	$0	$0	$0	$0	$0
Tribal Community Energy Efficiency	$854,851	$141,205	$65,000	$0	$0	$0	$0	$1,061,056
Totals for DSM Initiatives	**$8,591,852**	**$11,841,404**	**$1,020,000**	**$1,093,026**	**$755,000**	**$235,000**	**$0**	**$23,536,282**
Segment Totals	**$40,395,294**	**$22,068,242**	**$1,892,850**	**$2,816,218**	**$3,191,000**	**$950,000**	**$0**	**$71,313,604**

Staff Recommendation

PERFORMANCE INCENTIVE

74. APS is requesting a performance incentive for delivering cost-effective DSM programs which provide measurable net benefits for customers. The Company did not request a performance incentive in its 2021 DSM Plan.

75. The performance incentive is calculated based on the amount of energy saved and the amount of net benefits (total program benefits minus total program costs). The performance incentive structure, originally approved in Decision No. 69663 and modified in Decision Nos. 71448 and 74406, is described in the Company's Commission-approved DSM Plan of Administration ("POA"). It is a tiered system based upon the Company's achievement of established EE goals, which determines the percentage of net benefits for which the Company is allowed to request recovery. The amount allowed to be requested under the performance incentive is capped at $0.0125

per kWh saved. The performance incentive calculation does not include net benefits from the Codes and Standards or APS System Savings initiatives. Table 5 shows the proposed performance incentive calculation.

Table 5

Achievement Relative to EE Goals	Performance Incentive as % of Energy Efficiency Net Benefits	Performance Incentive Cap
<85%	0%	$0.0125 per kWh saved
85% to 95%	6%	
96% to 105%	7%	
>105%	8%	
Energy Savings (kWh)	**405,000,000**	
Percent of EE Goals	100%	
	Net Benefits	**Performance Incentive Cap**
Incentive %	7%	$0.0125 per kWh saved
2022 DSM Plan	$56,537,910	
Calculated Incentive	$3,957,654	$5,062,500

76. According to the Company, the calculation of 405,000,000 kWh as the figure for achieving 100 percent of its 2022 EE savings goal is based upon achieving 1.4 percent of 2021 adjusted retail sales. With the Company's estimated EE savings achieving 100 percent of the outlined goal, the Company is requesting to recover 7 percent of the estimated net benefits, which totals $3,957,654.

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Staff Recommendations

77. Staff recommends approval of the recovery of the Company's requested performance incentive of $3,957,654 which it is permitted to request under its current Commission-approved DSM POA.

DEMAND-SIDE MANAGEMENT ADJUSTMENT CHARGE

78. APS's proposed total budget is $78,377,257 for 2022 with an amount of $51,765,538 to be recovered through the Demand-Side Management Adjustment Charge ("DSMAC"). The increase in the total budget and the DSMAC collection amount results in an increase in the current DSMAC rates approved in Decision No. 78164 from $0.001374 per kWh and $0.508 per kW to $0.001726 per kWh and $0.637 per kW. Table 6 shows the 2022 revenue requirement to be recovered through the DSMAC proposed by APS and Staff.

Table 6

	APS Proposed
Total APS 2022 DSM Budget	**$78,377,257**
less Amount Recovered in Base Rates	($20,000,000)
less Collected and Allocated to Rewards Initiative	($384,863)
less Collected but Unspent Funds	($5,874,166)
Subtotal	$52,118,229
less Gain on Sale of Assets Balance	($352,690)
Total Revenue Requirement from DSMAC (assumes a 12-month collection period)	**$51,765,538**

79. The estimated monthly bill impact for residential customers using an average of 1,050 kWh per month would be approximately $0.37.

Staff Recommendations

80. Staff recommends approval of $51,765,538 to be collected through the DSMAC. In addition, Staff recommends approval of the updated DSMAC rates of $0.001726 per kWh and $0.637 per kW.

REQUESTS FOR WAIVERS

81. In response to Staff inquiry, APS confirmed its desire to continue its ability to shift up to 50 percent of budgeted funds between program segments and its ability to increase or decrease incentives as previously approved by the Commission. This would allow APS to respond to market changes, customer behavior and program needs in a more efficient manner. Funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program are prohibited from being moved to other programs.

Staff Recommendations

82. Staff recommends that APS be allowed to continue its ability to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission. In addition, Staff recommends that APS be allowed to continue its ability to increase or decrease incentives with a 60-day notice to the Commission. Staff further recommends that funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program are prohibited from being moved to other programs.

SUMMARY OF STAFF RECOMMENDATIONS

83. Staff recommends approval of the proposed continuation of the COVID-19 Quality Installation incentive of $1,000 per unit for all qualifying SEER 14 units, and $1,200 per unit for all qualifying equipment 15 SEER and above as part of the Existing Homes Program.

84. Staff recommends approval of the inclusion of the $50 incentive for qualifying Real Time Energy Monitoring Devices as part of the EHP.

85. Staff recommends approval of the proposed increased incentive, of $270 per home, for new ENERGY STAR® all-electric homes which meet program requirements relative to the existing $200 per home incentive for new ENERGY STAR® dual-fuel homes.

86. Staff recommends approval of APS's relaunching of event-based behavioral messages on peak days, as part for the residential Conservation Behavior Program.

87. Staff recommends approval of the proposed EC motors in HVAC air handlers within the Multifamily Energy Efficiency Program.

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88. Staff recommends approval of the proposed EC motor bathroom exhaust fans within the Multifamily Energy Efficiency Program.

89. Staff recommends approval of the proposed occupancy sensors for common areas within the Multifamily Energy Efficiency Program.

90. Staff recommends approval for the inclusion of the previously approved EV pre-wire measure as a measure within the Multifamily Energy Efficiency Program portfolio.

91. Staff recommends approval for the consolidated reporting of energy savings achieved in multifamily properties (including both residential units as well as their non-residential common areas) within the Multifamily Energy Efficiency Program.

92. Staff recommends approval of the proposed continuation of the increased per home spending cap of $9,000 until further Order of the Commission, for the Low-Income Weatherization Program.

93. Staff recommends approval for the reintroduction of the Shade Tree program into APS's Residential DSM portfolio.

94. Staff recommends approval for the inclusion of the proposed CO2 Sensors into the Existing Facilities Program portfolio.

95. Staff recommends approval for the inclusion of the proposed outside air economizers into the Existing Facilities Program portfolio.

96. Staff recommends approval for the inclusion of the proposed occupancy sensors into the Existing Facilities and Schools Programs' portfolios.

97. Staff recommends approval for the inclusion of the proposed demand response lighting controls into the Existing Facilities and Schools Programs' portfolios.

98. Staff recommends approval for the inclusion of the proposed flat-panel LED lighting measure into the Existing Facilities and Schools Programs' portfolios.

99. Staff recommends approval for the inclusion of the proposed fluorescent to smart LED panel conversions, as well as the standard flat panel to smart LED panel conversions, into the Existing Facilities and Schools Programs' portfolios.

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100. Staff recommends approval for the inclusion of the proposed high-efficiency battery chargers into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

101. Staff recommends approval for the inclusion of the proposed high-efficiency indoor agriculture dehumidification systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

102. Staff recommends approval for the inclusion of the proposed indoor agriculture LED lighting measure into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

103. Staff recommends approval for the inclusion of the proposed indoor high bay HID LED conversions into the Existing Facilities and Schools Programs' portfolios.

104. Staff recommends approval for the inclusion of the proposed smart screw-in LED bulbs into the Existing Facilities and Schools Programs' portfolios.

105. Staff recommends approval for the inclusion of the proposed HVAC thermal energy storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

106. Staff recommends approval for the inclusion of the proposed refrigeration thermal storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Non-Residential Programs' portfolios.

107. Staff recommends approval for the inclusion of the proposed water source heat pumps into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios.

108. Staff recommends approval for the continued implementation of the Rewards Pilot and the proposed increase in the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season. In addition, Staff recommends that APS be able to dispatch demand response events outside of on-peak periods, as necessary, based on system needs.

109. Staff recommends approval for implementation of the newly proposed fleet advisory service for commercial fleets in the EV Charging Demand Management Pilot.

110. Staff recommends approval of the proposal to roughly split the Tribal Energy Efficiency Program annual budget between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole.

111. Staff recommends approval for the funding dedicated to individual customers to be equally split between residential and non-residential customers.

112. Staff recommends approval of the total 2022 DSM Plan Budget of $78,377,257 with $51,765,538 to be collected through the DSMAC.

113. Staff recommends approval for the collection of the calculated performance incentive amount of $3,957,654.

114. Staff recommends approval of the updated DSMAC rates of $0.001726 per kWh and $0.637 per kW.

115. Staff recommends that APS be allowed to continue its ability to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission.

116. Staff recommends that APS be allowed to continue its ability to increase or decrease incentives with a 60-day notice to the Commission.

117. Staff recommends that funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program be prohibited from being moved to other programs.

118. Staff recommends that the 2022 DSM Plan, total budget, performance incentive, DSMAC collection amount, and surcharge amounts approved herein remain in effect until further Order of the Commission.

CONCLUSIONS OF LAW

1. Arizona Public Service Company is an Arizona public service corporation within the meaning of Article XV, Section 2, of the Arizona Constitution.

2. The Commission has jurisdiction over Arizona Public Service Company and over the subject matter of the Application.

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3. The Commission, having reviewed Arizona Public Service Company's application and Staff's Memorandum, concludes that it is in the public interest to approve Arizona Public Service Company's 2022 Demand Side Management Implementation Plan, as discussed herein

ORDER

IT IS THEREFORE ORDERED that the Arizona Public Service Company 2022 Demand-Side Management Implementation Plan is approved as discussed herein.

IT IS FURTHER ORDERED that the proposed continuation of the COVID-19 Quality Installation incentive of $1,000 per unit for all qualifying SEER 14 units, and $1,200 per unit for all qualifying equipment 15 SEER and above as part of the Existing Homes Program is approved.

IT IS FURTHER ORDERED that the proposed inclusion of the $50 incentive for qualifying Real Time Energy Monitoring Devices as part of Existing Homes Program is approved.

IT IS FURTHER ORDERED that the proposed increased incentive, of $270 per home, for new ENERGY STAR® all-electric homes which meet program requirements relative to the existing $200 per home incentive for new ENERGY STAR® dual-fuel homes is approved.

IT IS FURTHER ORDERED that the relaunching of event-based behavioral messages on peak days, as part for the residential Conservation Behavior Program is approved.

IT IS FURTHER ORDERED that the proposed EC motors in HVAC air handlers within the Multifamily Energy Efficiency Program is approved.

IT IS FURTHER ORDERED that the proposed EC motor bathroom exhaust fans within the Multifamily Energy Efficiency Program is approved.

IT IS FURTHER ORDERED that the proposed occupancy sensors for common areas within the Multifamily Energy Efficiency Program is approved.

IT IS FURTHER ORDERED that the inclusion of the previously approved EV pre-wire measure as a measure within the Multifamily Energy Efficiency Program portfolio is approved.

IT IS FURTHER ORDERED that the consolidated reporting of energy savings achieved in multifamily properties (including both residential units as well as their non-residential common areas) within the Multifamily Energy Efficiency Program is approved.

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IT IS FURTHER ORDERED that the proposed continuation of the increased per home spending cap of $9,000 until further Order of the Commission, for the Low-Income Weatherization Program, is approved.

IT IS FURTHER ORDERED that the reintroduction of the Shade Tree program into APS's Residential DSM portfolio, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed CO_2 Sensors into the Existing Facilities Program portfolio, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed outside air economizers into the Existing Facilities Program portfolio, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed occupancy sensors into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed demand response lighting controls into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed flat-panel LED lighting measure into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed fluorescent to smart LED panel conversions, as well as the standard flat panel to smart LED panel conversions, into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed high-efficiency battery chargers into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed high-efficiency indoor agriculture dehumidification systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed indoor agriculture LED lighting measure into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

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IT IS FURTHER ORDERED that the inclusion of the proposed indoor high bay HID LED conversions into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed smart screw-in LED bulbs into the Existing Facilities and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed HVAC thermal energy storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed refrigeration thermal storage systems into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the inclusion of the proposed water source heat pumps into the Existing Facilities, New Construction and Major Renovation, and Schools Programs' portfolios, is approved.

IT IS FURTHER ORDERED that the continued implementation of the Rewards Pilot and the proposed increase in the residential Cool Rewards annual per thermostat participation incentive from $25 to $35 per season, is approved.

IT IS FURTHER ORDERED that Arizona Public Service Company may dispatch demand response events outside of on-peak periods, as necessary, based on system needs.

IT IS FURTHER ORDERED that the implementation of the newly proposed fleet advisory service for commercial fleets in the EV Charging Demand Management Pilot, is approved.

IT IS FURTHER ORDERED that the proposal to roughly split the Tribal Energy Efficiency Program annual budget between (a) EE projects that serve individual homes or businesses and (b) community solar, storage, electrification, and EE projects designed to benefit the community as a whole, is approved.

IT IS FURTHER ORDERED that the funding dedicated to individual customers to be equally split between residential and non-residential customers, is approved.

IT IS FURTHER ORDERED that a total 2022 DSM Budget of $78,377,257 with $51,765,538 to be collected through the DSMAC, is approved.

IT IS FURTHER ORDERED that the collection of the proposed performance incentive amount, totaling $3,957,654, is approved.

IT IS FURTHER ORDERED that the updated DSMAC of $0.001726 per kWh and $0.637 per kW, is approved.

IT IS FURTHER ORDERED that Arizona Public Service Company shall be allowed to continue its ability to shift up to 50 percent of budgeted funds between program segments with a 60-day notice to the Commission.

IT IS FURTHER ORDERED that Arizona Public Service Company shall be allowed to continue its ability to increase or decrease incentives with a 60-day notice to the Commission.

IT IS FURTHER ORDERED that funds budgeted for the Limited-Income Weatherization Program, Schools Program and Tribal Program are prohibited from being moved to other programs.

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IT IS FURTHER ORDERED that the 2022 DSM Plan, total budget, performance incentive, DSMAC collection amount, and surcharge amounts approved herein remain in effect until further Order of the Commission.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION

CHAIRWOMAN MÁRQUEZ PETERSON COMMISSIONER KENNEDY

COMMISSIONER OLSON COMMISSIONER TOVAR COMMISSIONER O'CONNOR

IN WITNESS WHEREOF, I, MATTHEW J. NEUBERT, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this _____day of _____ , 2022.

_____
MATTHEW J. NEUBERT
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

EOA:RK:jn/MAS

Arizona Public Service Company
Docket No. E-01345A-21-0087

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